ANTIGEN BINDING PROTEINS TO PROPROTEIN CONVERTASE SUBTILISIN KEXIN TYPE 9 (PCSK9)

RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Applications Ser. No. 60/957,668, filed August 23, 2007, Ser No. 61/008,965, filed December 21, 2007, and Ser. No. 61/010,630, filed January 9, 2008, hereby incorporated by reference in their entireties.

FIELD OF THE INVENTION

[0002] The present invention relates to antigen binding proteins that bind to proprotein convertase subtilisin kexin type 9 (PCSK9) and methods of using and making the antigen binding proteins.

BACKGROUND OF VARIOUS EMBODIMENTS

[0003] Proprotein convertase subtilisin kexin type 9 (PCSK9) is a serine protease involved in regulating the levels of the low density lipoprotein receptor (LDLR) protein (Horton *et al.*, 2007; Seidah and Prat, 2007). *In vitro* experiments have shown that adding PCSK9 to HepG2 cells lowers the levels of cell surface LDLR (Benjannet *et al.*, 2004; Lagace *et al.*, 2006; Maxwell *et al.*, 2005; Park *et al.*, 2004). Experiments with mice have shown that increasing PCSK9 protein levels decreases levels of LDLR protein in the liver (Benjannet *et al.*, 2004; Lagace *et al.*, 2006; Maxwell *et al.*, 2005; Park *et al.*, 2004), while PCSK9 knockout mice have increased levels of LDLR in the liver (Rashid *et al.*, 2005). Additionally, various human PCSK9 mutations that result in either increased or decreased levels of plasma LDL have been identified (Kotowski *et al.*, 2006; Zhao *et al.*, 2006). PCSK9 has been shown to directly interact with the LDLR protein, be endocytosed along with the LDLR, and co-immunofluoresce with the LDLR throughout the endosomal pathway (Lagace *et al.*, 2006). Degradation of the LDLR by PCSK9 has not been observed and the mechanism through which it lowers extracellular LDLR protein levels is uncertain.

[0004] PCSK9 is a prohormone-proprotein convertase in the subtilisin (S8) family of serine proteases (Seidah *et al.*, 2003). Humans have nine prohormone-proprotein convertases

that can be divided between the S8A and S8B subfamilies (Rawlings *et al.*, 2006). Furin, PC1/PC3, PC2, PACE4, PC4, PC5/PC6 and PC7/PC8/LPC/SPC7 are classified in subfamily S8B. Crystal and NMR structures of different domains from mouse furin and PC1 reveal subtilisin-like pro- and catalytic domains, and a P domain directly C-terminal to the catalytic domain (Henrich *et al.*, 2003; Tangrea *et al.*, 2002). Based on the amino acid sequence similarity within this subfamily, all seven members are predicted to have similar structures (Henrich *et al.*, 2005). SKI-1/S1P and PCSK9 are classified in subfamily S8A. Sequence comparisons with these proteins also suggest the presence of subtilisin-like pro- and catalytic domains (Sakai *et al.*, 1998; Seidah *et al.*, 2003; Seidah *et al.*, 1999). In these proteins the amino acid sequence C-terminal to the catalytic domain is more variable and does not suggest the presence of a P domain.

[0005] Prohormone-proprotein convertases are expressed as zymogens and they mature through a multi step process. The function of the pro-domain in this process is two-fold. The pro-domain first acts as a chaperone and is required for proper folding of the catalytic domain (Ikemura *et al.*, 1987). Once the catalytic domain is folded, autocatalysis occurs between the pro-domain and catalytic domain. Following this initial cleavage reaction, the pro-domain remains bound to the catalytic domain where it then acts as an inhibitor of catalytic activity (Fu *et al.*, 2000). When conditions are correct, maturation proceeds with a second autocatalytic event at a site within the pro-domain (Anderson *et al.*, 1997). After this second cleavage event occurs the pro-domain and catalytic domain dissociate, giving rise to an active protease.

[0006] Autocatalysis of the PCSK9 zymogen occurs between Gln152 and Ser153 (VFAQ|SIP) (Naureckiene *et al.*, 2003), and has been shown to be required for its secretion from cells (Seidah *et al.*, 2003). A second autocatalytic event at a site within PCSK9's pro-domain has not been observed. Purified PCSK9 is made up of two species that can be separated by non-reducing SDS-PAGE; the pro-domain at 17 Kd, and the catalytic plus C-terminal domains at 65 Kd. PCSK9 has not been isolated without its inhibitory pro-domain, and measurements of PCSK9's catalytic activity have been variable (Naureckiene *et al.*, 2003; Seidah *et al.*, 2003).

SUMMARY OF VARIOUS EMBODIMENTS

[0007] In some embodiments, the invention comprises an antigen binding protein to PCSK9.

[0008] In some aspects, the invention comprises an isolated antigen binding protein that binds PCSK9 comprising: A) one or more heavy chain complementary determining regions (CDRHs) selected from the group consisting of: (i) a CDRH1 from a CDRH1 in a sequence selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60; (ii) a CDRH2 from a CDRH2 in a sequence selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60; (iii) a CDRH3 from a CDRH3 in a sequence selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60; and (iv) a CDRH of (i), (ii), and (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than 4 amino acids; B) one or more light chain complementary determining regions (CDRLs) selected from the group consisting of: (i) a CDRL1 from a CDRL1 in a sequence selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46; (ii) a CDRL2 from a CDRL2 in a sequence selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46; (iii) a CDRL3 from a CDRL3 in a sequence selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46; and (iv) a CDRL of (i), (ii) and (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than 4 amino acids; or C) one or more heavy chain CDRHs of A) and one or more light chain CDRLs of B). In some embodiments, the isolated antigen binding protein comprises at least one CDRH of A) and at least one CDRL of B). In some embodiments, the isolated antigen binding protein comprises at least two CDRH of A) and at least two CDRL of B). In some embodiments, the isolated antigen binding protein comprises said CDRH1, CDRH2, CDRH3, CDRL1, CDRL2 and CDRL3. In some embodiments, the CDRH of A) is selected from at least one of the group consisting of: (i) a CDRH1 amino acid sequence selected from the CDRH1 in a sequence selected from the group consisting of SEQ ID NO: 67, 79, 89, and 49; (ii) a CDRH2 amino acid

sequence selected from the CDRH2 in a sequence selected from the group consisting of SEQ ID NO: 67, 79, 89, and 49; (iii) a CDRH3 amino acid sequence selected from the CDRH3 in a sequence selected from the group consisting of SEQ ID NO: 67, 79, 89, and 49; and (iv) a CDRH of (i), (ii) and (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than 2 amino acids. In addition, the CDRL of B) is selected from at least one of the group consisting of: (i) a CDRL1 amino acid sequence selected from the CDRL1 in a sequence selected from the group consisting of SEQ ID NO: 12, 35, 32, and 23; (ii) a CDRL2 amino acid sequence selected from the CDRL2 in a sequence selected from the group consisting of SEQ ID NO: 12, 35, 32, and 23; (iii) a CDRL3 amino acid sequence selected from the CDRL3 in a sequence selected from the group consisting of SEQ ID NO: 12, 35, 32, and 23; and (iv) a CDRL of (i), (ii) and (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than 2 amino acids; or C) one or more heavy chain CDRHs of A) and one or more light chain CDRLs of B. In some embodiments, the CDRH of A) is selected from at least one of the group consisting of: (i) a CDRH1 amino acid sequence of the CDRH1 amino acid sequence in SEQ ID NO: 67; (ii) a CDRH2 amino acid sequence of the CDRH2 amino acid sequence in SEQ ID NO: 67; (iii) a CDRH3 amino acid sequence of the CDRH3 amino acid sequence in SEQ ID NO: 67; and (iv) a CDRH of (i), (ii) and (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than 2 amino acids; said CDRL of B) is selected from at least one of the group consisting of: (i) a CDRL1 amino acid sequence of the CDRL1 amino acid sequence in SEQ ID NO: 12; (ii) a CDRL2 amino acid sequence of the CDRL2 amino acid sequence in SEQ ID NO: 12; (iii) a CDRL3 amino acid sequence of the CDRL3 amino acid sequence in SEQ ID NO: 12; and (iv) a CDRL of (i), (ii) and (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than 2 amino acids; or C) one or more heavy chain CDRHs of A) and one or more light chain CDRLs of B). In some embodiments, the antigen binding protein comprises A) a CDRH1 of the CDRH1 sequence in SEQ ID NO: 67, a CDRH2 of the CDRH2 sequence in SEQ ID NO: 67, and a CDRH3 of the CDRH3 sequence in SEQ ID NO: 67, and B) a CDRL1 of the CDRL1 sequence in SEQ ID NO: 12, a CDRL2 of the CDRL2 sequence in SEQ ID NO: 12, and a CDRL3 of the CDRL3 sequence in SEQ ID NO: 12. In some embodiments, the antigen binding protein comprises a heavy chain variable region (VH) having at least 80% sequence identity with an amino acid sequence selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87,

58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60, and/or a light chain variable region (VL) having at least 80% sequence identity with an amino acid sequence selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46. In some embodiments, the VH has at least 90% sequence identity with an amino acid sequence selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60, and/or the VL has at least 90% sequence identity with an amino acid sequence selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46. In some embodiments, the VH is selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60, and/or the VL is selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46.

[0009] In some aspects, the invention comprises an isolated antigen binding protein that specifically binds to an epitope that is bound by any of the ABPs disclosed herein.

[0010] In some aspects, the invention comprises an isolated antigen binding protein that binds PCSK9, wherein the antigen binding protein comprises: A) one or more heavy chain CDRs (CDRHs) selected from at least one of the group consisting of: (i) a CDRH1 with at least 80% sequence identity to a CDRH1 in one of the sequences selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60; (ii) a CDRH2 with at least 80% sequence identity to a CDRH2 in one of the sequences selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60; and (iii) a CDRH3 with at least 80% sequence identity to a CDRH3 in one of the sequences selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60; B) one or more light chain CDRs (CDRLs) selected from at least one of the group consisting of: (i) a CDRL1 with at least 80% sequence identity to a CDRL1 in one of the sequences selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46; (ii)a CDRL2 with at least 80% sequence

identity to a CDRL2 in one of the sequences selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46; and (iii) a CDRL3 with at least 80% sequence identity to a CDRL3 in one of the sequences selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46; or C) one or more heavy chain CDRHs of A) and one or more light chain CDRLs of B). In some embodiments, the antigen binding protein comprises: A) one or more CDRHs selected from at least one of the group consisting of: (i) a CDRH1 with at least 90% sequence identity to a CDRH1 in one of the sequences selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60; (ii) a CDRH2 with at least 90% sequence identity to a CDRH2 in one of the sequences selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60; and (iii) a CDRH3 with at least 90% sequence identity to a CDRH3 in one of the sequences selected from the group consisting of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60; B) one or more CDRLs selected from at least one of the group consisting of: (i) a CDRL1 with at least 90% sequence identity to a CDRL1 in one of the sequences selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46; (ii) a CDRL2 with at least 90% sequence identity to a CDRL2 in one of the sequences selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46; and (iii) a CDRL3 with at least 90% sequence identity to a CDRL3 in one of the sequences selected from the group consisting of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46; or C) one or more heavy chain CDRHs of A) and one or more light chain CDRLs of B).

[0011] In some aspects, the invention comprises an isolated antigen binding protein that binds PCSK9, the antigen binding protein comprises: A) a heavy chain complementary determining region (CDRH) selected from at least one of the group consisting of: (i) a CDRH3 selected from the CDRH3 within the sequences selected from the group consisting of SEQ ID NOs: 67, 79, and 49, (ii) a CDRH3 that differs in amino acid sequence from the CDRH3 of (i) by

an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}$ (SEQ ID NO: 404), wherein X_1 is selected from the group consisting of D, A, R, and not amino acid, X_2 is selected from the group consisting of Y, I, G, and no amino acid, X_3 is selected from the group consisting of D, A, G, and no amino acid, X_4 is selected from the group consisting of F, A, L, and no amino acid, X_5 is selected from the group consisting of W, L, A, and no amino acid, X_6 is selected from the group consisting of S, Y, A, and no amino acid, X_7 is selected from the group consisting of A, Y, R, and no amino acid, X_8 is selected from the group consisting of Y, P, and no amino acid, X_9 is selected from the group consisting of Y, G, and no amino acid, X_{10} is selected from the group consisting of D, G, and no amino acid, X_{11} is selected from the group consisting of A, M, and no amino acid, X_{12} is selected from the group consisting of F, D, and no amino acid, X_{13} is selected from the group consisting of D, V, and no amino acid, X_{14} is selected from the group consisting of V and no amino acid; B) a light chain complementary determining region (CDRL) selected from at least one of the group consisting of: (i) a CDRL3 selected from the CDRL3 within the sequences selected from the group consisting of SEQ ID NOs: 12, 35, and 23, (ii) a CDRL3 that differs in amino acid sequence from the CDRL3 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRL3 amino acid sequence selected from the group consisting of: $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}$ (SEQ ID NO: 405), wherein X_1 is selected from the group consisting of Q and G, X_2 is selected from the group consisting of S, T, A, and no amino acid, X_3 is selected from the group consisting of Y, no amino acid, and W, X_4 is selected from the group consisting of D and no amino acid, X_5 is selected from the group consisting of S and no amino acid, X_6 is selected from the group consisting of S and no amino acid, X_7 is selected from the group consisting of L, T, and no amino acid, X_8 is selected from the group consisting of no amino acid, A, and S, X_9 is selected from the group consisting of no amino acid, G, A, and V, X_{10} is selected from the group consisting of no amino acid, S, Y, and V, X_{11} is selected from the group consisting of no amino acid and V.

[0012] In some aspects, the invention comprises an isolated antigen binding protein comprising a light chain having the amino acid sequence selected from the group consisting of: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, 46, and some combination thereof.

[0013] In some embodiments, the antigen binding protein specifically binds to an epitope that is bound by at least one of the antigen binding proteins disclosed herein. In some embodiments, the isolated antigen binding protein further comprises a heavy chain having the amino acid sequence selected from the group consisting of: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, 60, and some combination thereof. In some embodiments, the amino acid sequence of the ABP is selected from the group consisting of SEQ ID NO: 12, 35, 23, and some combination thereof. In some embodiments, the heavy chain of the ABP comprises a CDRH3 of SEQ ID NO: 67, a CDRH2 of SEQ ID NO: 67, and a CDRH1 of SEQ ID NO:67, and said light chain comprises a CDRL3 of SEQ ID NO: 12, a CDRL2 of SEQ ID NO: 12, and a CDRL1 of SEQ ID NO: 12. In some embodiments, the isolated antigen binding protein is a monoclonal antibody, a polyclonal antibody, a recombinant antibody, a human antibody, a humanized antibody, a chimeric antibody, a multispecific antibody, or an antibody fragment thereof. In some embodiments, the isolated antigen binding protein is a Fab fragment, a Fab' fragment, a $F(ab')_2$ fragment, a Fv fragment, a diabody, or a single chain antibody molecule. In some embodiments, the isolated antigen binding protein is a human antibody. In some embodiments, the isolated antigen binding protein is a monoclonal antibody. In some embodiments, the isolated antigen binding protein is of the IgG1-, IgG2- IgG3- or IgG4-type. In some embodiments, the isolated antigen binding protein is of the IgG4- or IgG2-type. In some embodiments, the isolated antigen binding protein is coupled to a labeling group. In some embodiments, the isolated antigen binding protein competes for binding to PCSK9 with an antigen binding protein described herein. In some embodiments, the isolated antigen binding protein is a monoclonal antibody, a polyclonal antibody, a recombinant antibody, a human antibody, a humanized antibody, a chimeric antibody, a multispecific antibody, or an antibody fragment thereof. In some embodiments, the isolated antigen binding protein is a Fab fragment, a Fab' fragment, a $F(ab')_2$ fragment, a Fv fragment, a diabody, or a single chain antibody molecule. In some embodiments, the isolated antigen binding protein is coupled to a labeling group. In some embodiments, the isolated antigen binding protein reduces binding of PCSK9 to LDLR. In some embodiments, the isolated antigen binding protein the antigen binding protein decreases an amount of LDL present in a subject when administered to the subject. In some embodiments, the isolated antigen binding protein decreases an amount of serum cholesterol present in a subject when administered to the subject. In some embodiments, the isolated antigen

binding protein increases an amount of LDLR present in a subject when administered to the subject.

[0014] In some aspects, the invention comprises a vector comprising a nucleic acid molecule as described herein. In some embodiments, the invention comprises a host cell comprising a nucleic acid molecule as described herein.

[0015] In some aspects, the invention comprises an isolated antigen binding protein that competes for binding to PCSK9 with an antigen binding protein disclosed herein.

[0016] In some aspects, the invention comprises a nucleic acid molecule encoding the antigen binding protein according disclosed herein.

[0017] In some aspects, the invention comprises a pharmaceutical composition comprising at least one antigen binding protein described herein.

[0018] In some aspects, the invention comprises a method for treating or preventing a condition associated with elevated serum cholesterol levels in a patient, comprising administering to a patient in need thereof an effective amount of at least one isolated antigen binding protein disclosed herein.

[0019] In some aspects, the invention comprises a method of inhibiting binding of PCSK9 to LDLR in a subject comprising administering an effective amount of at least one antigen binding protein disclosed herein.

[0020] In some aspects, the invention comprises an antigen binding protein that selectively binds to PCSK9, wherein the antigen binding protein binds to PCSK9 with a K_d that is smaller than 100 pM.

[0021] In some aspects, the invention comprises a method for treating or preventing a condition associated with elevated serum cholesterol levels in a subject, the method comprising administering to a subject in need thereof an effective amount of at least one isolated antigen binding protein disclosed herein simultaneously or sequentially with an agent that elevates the availability of LDLR protein.

[0022] In some aspects, the invention comprises a method of lowering serum cholesterol level in a subject, the method comprising administering to a subject an effective amount of at least one isolated antigen binding protein as disclosed herein.

[0023] In some aspects, the invention comprises a method of lowering serum cholesterol level in a subject, the method comprising administering to a subject an effective

amount of at least one isolated antigen binding protein as disclosed herein, simultaneously or sequentially with an agent that elevates the availability of LDLR protein.

[0024] In some aspects, the invention comprises a method of increasing LDLR protein level in a subject, the method comprising administering to a subject an effective amount of at least one isolated antigen binding protein as disclosed herein.

[0025] In some aspects, the invention comprises a method of increasing LDLR protein levels in a subject, the method comprising administering to a subject an effective amount of at least one isolated antigen binding protein as disclosed herein simultaneously or sequentially with an agent that elevates the availability of LDLR protein.

[0026] In some aspects, the invention comprises a pharmaceutical composition comprising an ABP as disclosed herein and an agent that elevates the availability of LDLR protein levels. In some embodiments, the agent that elevates the availability of LDLR protein comprises a statin. In some embodiments, the statin is selected from the group consisting of atorvastatin, cerivastatin, fluvastatin, lovastatin, mevastatin, pitavastatin, pravastatin, rosuvastatin, simvastatin, and some combination thereof.

[0027] In some aspect, the invention comprises a method of making the antigen binding protein as described herein, comprising the step of preparing said antigen binding protein from a host cell that secretes said antigen binding protein.

[0028] In some aspect, the invention comprises a pharmaceutical composition comprising at least one antigen binding protein as described herein and a pharmaceutically acceptable excipient. In some embodiments, the pharmaceutical composition further comprises an additional active agent. In some embodiments, said additional active agent is selected from the group consisting of a radioisotope, radionuclide, a toxin, or a therapeutic and a chemotherapeutic group.

[0029] In some aspects, the invention comprises a method for treating or preventing a condition associated with an elevated serum cholesterol level in a patient. The method comprises administering to a patient in need thereof an effective amount of at least one isolated antigen binding protein as disclosed herein. In some embodiments, the condition is hypercholesterolemia.

[0030] In some aspects, the invention comprises a method of inhibiting binding of PCSK9 to LDLR in a patient comprising administering an effective amount of at least one antigen binding protein according as described herein.

[0031] In some aspect, the invention comprises an antigen binding protein that binds to PCSK9 with a K_d that is smaller than 100 pM. In some embodiments, the antigen binding protein binds with a K_d that is smaller than 10 pM. In some embodiments, the antigen binding protein binds with a K_d that is less than 5 pM.

[0032] In some aspects, the invention comprises a method for treating or preventing a condition associated with elevated serum cholesterol levels in a subject, said method comprising administering to a subject in need thereof an effective amount of at least one isolated antigen binding protein described herein simultaneously or sequentially with an agent that elevates the availability of LDLR protein. In some embodiments, the agent that elevates the availability of LDLR protein comprises a statin. In some embodiments, the statin is selected from the group consisting of atorvastatin, cerivastatin, fluvastatin, lovastatin, mevastatin, pitavastatin, pravastatin, rosuvastatin, simvastatin, and some combination thereof.

[0033] In some aspects, the invention comprises a method of lowering the serum cholesterol level in a subject. The method comprises administering to a subject an effective amount of at least one isolated antigen binding protein as described herein.

[0034] In some aspects, the invention comprises a method of lowering serum cholesterol levels in a subject comprising administering to a subject an effective amount of at least one isolated antigen binding protein, as described herein, simultaneously or sequentially with an agent that elevates the availability of LDLR protein. In some embodiments, the agent that elevates the availability of LDLR protein comprises a statin. In some embodiments, the statin is selected from the group consisting of atorvastatin, cerivastatin, fluvastatin, lovastatin, mevastatin, pitavastatin, pravastatin, rosuvastatin, simvastatin, and some combination thereof.

[0035] In some aspects, the invention comprises a method of increasing LDLR protein levels in a subject by administering to a subject an effective amount of at least one isolated antigen binding protein as provided herein.

[0036] In some aspects, the invention comprises a method of increasing LDLR protein levels in a subject by administering to a subject an effective amount of at least one isolated antigen binding protein, as described herein, simultaneously or sequentially with an agent that elevates the availability of LDLR protein. In some embodiments, the agent that elevates the availability of LDLR protein levels comprises a statin. In some embodiments, the

statin is selected from the group consisting of atorvastatin, cerivastatin, fluvastatin, lovastatin, mevastatin, pitavastatin, pravastatin, rosuvastatin, simvastatin, and some combination thereof.

[0037] In some aspects, the invention comprises a neutralizing antibody that binds to PCSK9 and reduces a low density lipoprotein receptor (LDLR) lowering effect of PCSK9 on LDLR. In some embodiments, the antibody specifically binds to PCSK9. In some embodiments, the antibody binds to the catalytic domain of PCSK9. In some embodiments, the antibody binds to an epitope within residues 31-447 of SEQ ID NO: 3. In some embodiments, the antibody binds to PCSK9 having an amino acid sequence that is at least 90% identical to SEQ ID NO: 3.

[0038] In some aspects, the invention comprises a neutralizing antigen binding protein that binds to PCSK9, wherein the antigen binding protein binds to PCSK9 at a location within residues 31-447 of SEQ ID NO: 3. In some embodiments, when the antigen binding protein is bound to PCSK9, the antibody is positioned 8 angstroms or less from at least one of the following residues of PCSK9: S153, I154, P155, R194, D238, A239, I369, S372, D374, C375, T377, C378, F379, V380, S381, W156, N157, L158, E159, H193, E195, H229, R237, G240, K243, D367, I368, G370, A371, S373, S376, Q382, W72, F150, A151, Q152, T214, R215, F216, H217, A220, S221, K222, S225, H226, C255, Q256, G257, K258, N317, F318, T347, L348, G349, T350, L351, E366, D367, D374, V380, S381, Q382, S383, G384, K69, D70, P71, S148, V149, D186, T187, E211, D212, G213, R218, Q219, C223, D224, G227, H229, L253, N254, G259, P288, A290, G291, G316, R319, Y325, V346, G352, T353, G365, I368, I369, S372, S373, C378, F379, T385, S386, Q387, S153, S188, I189, Q190, S191, D192, R194, E197, G198, R199, V200, D224, R237, D238, K243, S373, D374, S376, T377, F379, I154, T187, H193, E195, I196, M201, V202, C223, T228, S235, G236, A239, G244, M247, I369, S372, C375, or C378. In some embodiments, the antibody is positioned 8 angstroms or less from at least one of the following residues of PCSK9: S153, I154, P155, R194, D238, A239, I369, S372, D374, C375, T377, C378, F379, V380, S381, W156, N157, L158, E159, H193, E195, H229, R237, G240, K243, D367, I368, G370, A371, S373, S376, or Q382. In some embodiments, the antibody is positioned 5 angstroms or less from at least one of the following residues of PCSK9: S153, I154, P155, R194, D238, A239, I369, S372, D374, C375, T377, C378, F379, V380, or S381. In some embodiments, the antibody is positioned 5 angstroms or less from at least two of the following residues of PCSK9: S153, I154, P155, R194, D238, A239, I369, S372, D374,

C375, T377, C378, F379, V380, or S381. In some embodiments, the antibody is 5 angstroms or less from at least four of the following residues of PCSK9: S153, I154, P155, R194, D238, A239, I369, S372, D374, C375, T377, C378, F379, V380, or S381. In some embodiments, the antibody is positioned 8 angstroms or less from at least one of the following residues of PCSK9: W72, F150, A151, Q152, T214, R215, F216, H217, A220, S221, K222, S225, H226, C255, Q256, G257, K258, N317, F318, T347, L348, G349, T350, L351, E366, D367, D374, V380, S381, Q382, S383, G384, K69, D70, P71, S148, V149, D186, T187, E211, D212, G213, R218, Q219, C223, D224, G227, H229, L253, N254, G259, P288, A290, G291, G316, R319, Y325, V346, G352, T353, G365, I368, I369, S372, S373, C378, F379, T385, S386, or Q387. In some embodiments, the antibody is positioned 5 angstroms or less from at least one of the following residues of PCSK9: W72, F150, A151, Q152, T214, R215, F216, H217, A220, S221, K222, S225, H226, C255, Q256, G257, K258, N317, F318, T347, L348, G349, T350, L351, E366, D367, D374, V380, S381, Q382, S383, or G384. In some embodiments, the antibody is positioned 5 angstroms or less from at least two of the following residues of PCSK9: W72, F150, A151, Q152, T214, R215, F216, H217, A220, S221, K222, S225, H226, C255, Q256, G257, K258, N317, F318, T347, L348, G349, T350, L351, E366, D367, D374, V380, S381, Q382, S383, or G384. In some embodiments, the antibody is positioned 5 angstroms or less from at least four of the following residues of PCSK9: W72, F150, A151, Q152, T214, R215, F216, H217, A220, S221, K222, S225, H226, C255, Q256, G257, K258, N317, F318, T347, L348, G349, T350, L351, E366, D367, D374, V380, S381, Q382, S383, or G384. In some embodiments, the antibody is positioned 8 angstroms or less from at least one of the following residues of PCSK9: S153, S188, I189, Q190, S191, D192, R194, E197, G198, R199, V200, D224, R237, D238, K243, S373, D374, S376, T377, F379, I154, T187, H193, E195, I196, M201, V202, C223, T228, S235, G236, A239, G244, M247, I369, S372, C375, or C378. In some embodiments, the antibody is positioned 5 angstroms or less from at least one of the following residues of PCSK9: S153, S188, I189, Q190, S191, D192, R194, E197, G198, R199, V200, D224, R237, D238, K243, S373, D374, S376, T377, or F379. In some embodiments, the antibody is positioned 5 angstroms or less from at least two of the following residues of PCSK9: S153, S188, I189, Q190, S191, D192, R194, E197, G198, R199, V200, D224, R237, D238, K243, S373, D374, S376, T377, or F379. In some embodiments, the antibody is positioned 5 angstroms or less from at least four of the following residues of PCSK9: S153, S188, I189,

Q190, S191, D192, R194, E197, G198, R199, V200, D224, R237, D238, K243, S373, D374, S376, T377, or F379 .

[0039] In some aspects, the invention comprises a neutralizing antibody that binds to PCSK9, wherein the antibody binds to PCSK9 and reduces the likelihood that PCSK9 binds to LDLR.

[0040] In some embodiments, an antibody or antigen binding molecule that binds to PCSK9 is contemplated. The antibody binds to PCSK9 at a location within residues 31-447 of SEQ ID NO: 3. In some embodiments, the antibody or antigen binding molecule, when bound to PCSK9, is positioned 8 angstroms or less from at least one of the following residues of PCSK9: S153, I154, P155, R194, D238, A239, I369, S372, D374, C375, T377, C378, F379, V380, S381, W156, N157, L158, E159, H193, E195, H229, R237, G240, K243, D367, I368, G370, A371, S373, S376, Q382, W72, F150, A151, Q152, T214, R215, F216, H217, A220, S221, K222, S225, H226, C255, Q256, G257, K258, N317, F318, T347, L348, G349, T350, L351, E366, D367, D374, V380, S381, Q382, S383, G384, K69, D70, P71, S148, V149, D186, T187, E211, D212, G213, R218, Q219, C223, D224, G227, H229, L253, N254, G259, P288, A290, G291, G316, R319, Y325, V346, G352, T353, G365, I368, I369, S372, S373, C378, F379, T385, S386, Q387, S153, S188, I189, Q190, S191, D192, R194, E197, G198, R199, V200, D224, R237, D238, K243, S373, D374, S376, T377, F379, I154, T187, H193, E195, I196, M201, V202, C223, T228, S235, G236, A239, G244, M247, I369, S372, C375, or C378.

[0041] In some embodiments, an isolated antibody or antigen binding molecule that blocks an antibody to PCSK9 from binding within 8 angstroms of a residue of PCSK9 is provided. In some embodiments the residue of PCSK9 is selected from at least one of the following PCSK9 residues: S153, I154, P155, R194, D238, A239, I369, S372, D374, C375, T377, C378, F379, V380, S381, W156, N157, L158, E159, H193, E195, H229, R237, G240, K243, D367, I368, G370, A371, S373, S376, Q382, W72, F150, A151, Q152, T214, R215, F216, H217, A220, S221, K222, S225, H226, C255, Q256, G257, K258, N317, F318, T347, L348, G349, T350, L351, E366, D367, D374, V380, S381, Q382, S383, G384, K69, D70, P71, S148, V149, D186, T187, E211, D212, G213, R218, Q219, C223, D224, G227, H229, L253, N254, G259, P288, A290, G291, G316, R319, Y325, V346, G352, T353, G365, I368, I369, S372, S373, C378, F379, T385, S386, Q387, S153, S188, I189, Q190, S191, D192, R194, E197, G198, R199, V200, D224, R237, D238, K243, S373, D374, S376, T377, F379, I154, T187,

H193, E195, I196, M201, V202, C223, T228, S235, G236, A239, G244, M247, I369, S372, C375, or C378.

[0042] In some embodiments, an isolated antibody or antigen binding molecule that binds to PCSK9 at a location that overlaps with a location that LDLR binds to PCSK9 is provided. In some embodiments, the location that LDLR binds to PCSK9 includes at least one amino acid residue selected from the group consisting of: S153, I154, P155, R194, D238, A239, I369, S372, D374, C375, T377, C378, F379, V380, and S381.

[0043] In some embodiments, an isolated antibody or antigen binding molecule that binds to PCSK9 is provided. In some embodiments, the antibody or antigen binding molecule reduces the likelihood that EGFa will bind to PCSK9 within 8 angstroms of at least one of the following residues on PCSK9: S153, I154, P155, R194, D238, A239, I369, S372, D374, C375, T377, C378, F379, V380, S381, W156, N157, L158, E159, H193, E195, H229, R237, G240, K243, D367, I368, G370, A371, S373, S376, or Q382.

[0044] In some embodiments, an antibody, antigen binding protein, or antigen binding molecule that binds to a surface of PCSK9 that overlaps with a surface that EGFa binds, Ab 21B12 binds, and/or 31H4 binds is provided. In some embodiments, an antibody, antigen binding protein, or antigen binding molecule that binds to PCSK9 in a manner that is similar to that depicted in the figures is provided.

[0045] In some embodiments, the above embodiments are neutralizing antibodies or antigen binding proteins. In some embodiments, the antigen binding protein is not LDLR or a fragment thereof (such as EGFa).

[0046] In some aspects, the invention comprises an isolated neutralizing antibody, wherein when the antibody is bound to PCSK9, the antibody is positioned 8 angstroms or less from at least one of the following residues of PCSK9: T468, R469, M470, A471, T472, R496, R499, E501, A502, Q503, R510, H512, F515, P540, P541, A542, E543, H565, W566, E567, V568, E569, R592, E593, S465, G466, P467, A473, I474, R476, G497, E498, M500, G504, K506, L507, V508, A511, N513, A514, G516, V536, T538, A539, A544, T548, D570, L571, H591, A594, S595, and H597 of SEQ ID NO: 3. In some embodiments, the antibody is positioned 5 angstroms or less from at least one of the following residues of PCSK9: T468, R469, M470, A471, T472, R496, R499, E501, A502, Q503, R510, H512, F515, P540, P541, A542, E543, H565, W566, E567, V568, E569, R592, and E593 of SEQ ID NO: 3.

[0047] In some aspects, the invention comprises an isolated antigen binding protein. The antigen binding protein comprises: A) a CDRH1 of the CDRH1 sequence in SEQ ID NO: 89, a CDRH2 of the CDRH2 sequence in SEQ ID NO: 89, and a CDRH3 of the CDRH3 sequence in SEQ ID NO: 89, and B) a CDRL1 of the CDRL1 sequence in SEQ ID NO:32, a CDRL2 of the CDRL2 sequence in SEQ ID NO:32, and a CDRL3 of the CDRL3 sequence in SEQ ID NO:32.

[0048] In some aspects, the invention comprises an isolated antigen binding protein that binds to a PCSK9 protein of SEQ ID NO: 1 where the binding between said isolated antigen binding protein and a variant PCSK9 protein is less than 50% of the binding between the isolated antigen binding protein and the PCSK9 protein of SEQ ID NO: 1 and/or SEQ ID NO: 303. In some embodiments, the variant PCSK9 protein comprises at least one mutation of a residue at a position selected from the group consisting or comprising 207, 208, 185, 181, 439, 513, 538, 539, 132, 351, 390, 413, 582, 162, 164, 167, 123, 129, 311, 313, 337, 519, 521, and 554, as shown in SEQ ID NO: 1. In some embodiments, the at least one mutation selected from the group comprising or consisting of R207E, D208R, E181R, R185E, R439E, E513R, V538R, E539R, T132R, S351R, A390R, A413R, and E582R. In some embodiments, the at least one mutation is selected from the group consisting of D162R, R164E, E167R, S123R, E129R, A311R, D313R, D337R, R519E, H521R,and Q554R.

[0049] In some aspects, the invention comprises an antigen binding protein that binds to a PCSK-9 protein of SEQ ID NO: 303 in a first manner and binds to a variant of PCSK9 in a second manner. The PCSK9 variant has at least one point mutation at a position selected from the group comprising or consisting of: 207, 208, 185, 181, 439, 513, 538, 539, 132, 351, 390, 413, 582, 162, 164, 167, 123, 129, 311, 313, 337, 519, 521, and 554 of SEQ ID NO: 303 and/or SEQ ID NO: 1. In some embodiments, the first manner comprises a first EC50, a first Bmax, or a first EC50 and a first Bmax. In some embodiments, the second manner comprises a second EC50, a second Bmax, or a second EC50 and a second Bmax. The value for the first manner is different from the value for the second manner. In some embodiments, the first manner comprises a first EC50, wherein the second manner involves a second EC50, and wherein the point mutation is selected from the group consisting or comprising: R207E, D208R, E181R, R185E, R439E, E513R, V538R, E539R, T132R, S351R, A390R, A413R, and E582R. In some embodiments, the first EC50 is at least 20% different from the second EC50. In some

embodiments, the first EC50 is at least 50% different from the second EC50. In some embodiments, the second EC50 is a larger numerical value than the first EC50. In some embodiments, the first EC50 is determined by a multiplex bead binding assay. In some embodiments, the second EC50 is greater than 1 um. In some embodiments, the antigen binding protein is a neutralizing antigen binding protein. In some embodiments, the neutralizing antigen binding protein is a competitive neutralizing antigen binding protein. In some embodiments, the neutralizing antigen binding protein is a non-competitive neutralizing antigen binding protein. In some embodiments, the first manner comprises a first Bmax and the second manner comprises a second Bmax that is different from the first Bmax. The PCSK9 variant has at least one point mutation selected from the group consisting or comprising: D162R, R164E, E167R, S123R, E129R, A311R, D313R, D337R, R519E, H521R,and Q554R. In some embodiments, the second Bmax is about 10% of the first Bmax. In some embodiments, the first Bmax is at least 20% different from the second Bmax. In some embodiments, the first Bmax is at least 50% different from the second Bmax.

[0050] In some aspects, the invention comprises an isolated antigen binding protein that binds to a PCSK9 protein of SEQ ID NO: 3, wherein the epitope of the antigen binding protein includes at least one of the following amino acids of SEQ ID NO: 1: 207, 208, 181, 185, 439, 513, 538, 539, 132, 351, 390, 413, 582, 162, 164, 167, 123, 129, 311, 313, 337, 519, 521, and 554.

[0051] In some aspects, the invention comprises an isolated neutralizing antigen binding protein that binds to a PCSK9 protein comprising the amino acid sequence of SEQ ID NO: 1, wherein the neutralizing antigen binding protein decreases the LDLR lowering effect of PCSK9 on LDLR. In some embodiments, the antigen binding protein is a LDLR non-competitive neutralizing antigen binding protein. In some embodiments, the antigen binding protein is a LDLR competitive neutralizing antigen binding protein.

[0052] In some aspects, the invention comprises an isolated antigen binding protein, wherein said antigen binding protein comprises: A) a CDRH1 of the CDRH1 sequence in SEQ ID NO: 49, a CDRH2 of the CDRH2 sequence in SEQ ID NO: 49, and a CDRH3 of the CDRH3 sequence in SEQ ID NO: 49, and B) a CDRL1 of the CDRL1 sequence in SEQ ID NO:23, a CDRL2 of the CDRL2 sequence in SEQ ID NO:23, and a CDRL3 of the CDRL3 sequence in SEQ ID NO:23.

[0053] In some aspects, the invention comprises a composition comprising a crystallized PCSK9 protein and an antigen binding protein that binds to PCSK9. The composition comprises the crystallized PCSK9 protein is such that the three dimensional structure of the PCSK9 protein can be determined to a resolution of about 2.2 angstroms or better. In some embodiments, the antigen binding protein is an antibody or a fragment thereof.

[0054] In some aspects, the invention comprises a crystallized PCSK9 protein and at least an EGFa section of a LDLR protein, wherein the EGFa section of the LDLR protein is bound by a PCSK9 protein, wherein said crystallized PCSK9 protein is such that the three dimensional structure of the PCSK9 protein can be determined to a resolution of about 2.2 angstroms or better. In some embodiments, the molecular model is on a computer readable medium.

[0055] In some aspects, the invention comprises the use of an antigen binding protein as described herein, in the preparation of a medicament for the lowering of serum cholesterol.

[0056] In some aspects, the invention comprises the use of an antigen binding protein as described herein, in the preparation of a medicament for treating or preventing a condition associated with elevated serum cholesterol levels in a subject.

[0057] In some aspects, the invention comprises an isolated antigen binding protein that binds PCSK9, the antigen binding protein comprising: A) a heavy chain complementary determining region (CDRH) selected from at least one of the group consisting of: (i) a CDRH1 selected from the CDRH1 within the sequences selected from the group consisting of SEQ ID NOs: 67, 79, 89, and 49, (ii) a CDRH1 that differs in amino acid sequence from the CDRH1 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRH1 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}$ (SEQ ID NO: 406), wherein X_1 is selected from the group consisting of G, X_2 is selected from the group consisting of Y, F, and G, X_3 is selected from the group consisting of T and S, X_4 is selected from the group consisting of L and F, X_5 is selected from the group consisting of T, S, and N, X_6 is selected from the group consisting of S and A, X_7 is selected from the group consisting of Y and F, X_8 is selected from the group consisting of G, S, and Y, X_9 is selected from the group consisting of I, M, and W, X_{10} is selected from the group consisting of S, N and H, B) a light chain complementary determining region (CDRL) selected from at least one of the group consisting of: (i) a CDRL1 selected from the CDRL1 within the sequences selected from

the group consisting of SEQ ID NOs: 12, 32, 35, and 23, (ii) a CDRL1 that differs in amino acid sequence from the CDRL3 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRL1 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}$ (SEQ ID NO: 407), wherein X_1 is selected from the group consisting of T and no amino acid, X_2 is selected from the group consisting of G and S, X_3 is selected from the group consisting of S, T, and G, X_4 is selected from the group consisting of S, X_5 is selected from the group consisting of S, X_6 is selected from the group consisting of N, D, and S, X_7 is selected from the group consisting of I, V, and N, X_8 is selected from the group consisting of G and I, X_9 is selected from the group consisting of A and G, X_{10} is selected from the group consisting of G, Y, S, and N, X_{11} is selected from the group consisting of Y and N, X_{12} is selected from the group consisting of D, S, T, and F, X_{13} is selected from the group consisting of V, X_{14} is selected from the group consisting of S, N, and H. One of skill in the art will appreciate that a single ABP or antibody can meet one or more of the above options and still fall within the described invention for this embodiment.

[0058] In some aspects, the invention comprises an isolated antigen binding protein that binds PCSK9, the antigen binding protein comprising: A) a heavy chain complementary determining region (CDRH) selected from at least one of the group consisting of the following: (i) a CDRH2 selected from the CDRH2 within the sequences selected from the group consisting of SEQ ID NOs: 67, 79, 89, and 49, (ii) a CDRH2 that differs in amino acid sequence from the CDRH2 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRH2 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}$ $X_{15}X_{16}X_{17}$ (SEQ ID NO: 408), wherein X_1 is selected from the group consisting of W, S, L and no amino acid, X_2 is selected from the group consisting of V, I, and E, X_3 is selected from the group consisting of S, W, and I, X_4 is selected from the group consisting of F, S, and N, X_5 is selected from the group consisting of Y, S, D, and H, X_6 is selected from the group consisting of N, S, and G, X_7 is selected from the group consisting of S and G, X_8 is selected from the group consisting of N, Y, D, and R, X_9 is selected from the group consisting of T, I, and E, X_{10} is selected from the group consisting of N, S, Y, and D, X_{11} is selected from the group consisting of Y, X_{12} is selected from the group consisting of A and N, X_{13} is selected from the group consisting of Q, D, and P, X_{14} is selected from the group consisting of K and S, X_{15} is selected from the group consisting of L, and V, X_{16} is selected from

the group consisting of Q and K, X_{17} is selected from the group consisting of G and S, B) a light chain complementary determining region (CDRL) selected from at least one of the group consisting of the following: (i) a CDRL2 selected from the CDRL3 within the sequences selected from the group consisting of SEQ ID NOs: 12, 32, 35, and 23, (ii) a CDRL2 that differs in amino acid sequence from the CDRL3 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRL2 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6X_7$ (SEQ ID NO: 409), wherein X_1 is selected from the group consisting of G, E, S, and D, X_2 is selected from the group consisting of N, V, and Y, X_3 is selected from the group consisting of S and N, X_4 is selected from the group consisting of N, Q, and K, X_5 is selected from the group consisting of R, X_6 is selected from the group consisting of P, X_7 is selected from the group consisting of S.

[0059] In some aspects, the invention comprises An isolated antigen binding protein that binds PCSK9, the antigen binding protein comprising: A) a heavy chain complementary determining region (CDRH) selected from at least one of the group consisting of the following: (i) a CDRH3 selected from the CDRH3 within the sequences selected from the group consisting of SEQ ID NOs: 67, 79, 89, and 49, (ii) a CDRH3 that differs in amino acid sequence from the CDRH3 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRH3 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}$ (SEQ ID NO: 410), wherein X_1 is selected from the group consisting of D, and no amino acid, X_2 is selected from the group consisting of Y, A, and no amino acid, X_3 is selected from the group consisting of D, I, and no amino acid, X_4 is selected from the group consisting of F, A, and no amino acid, X_5 is selected from the group consisting of W, A, and no amino acid, X_6 is selected from the group consisting of S, L, and no amino acid, X_7 is selected from the group consisting of A, Y, G, and no amino acid, X_8 is selected from the group consisting of Y, Q, and no amino acid, X_9 is selected from the group consisting of G, Y, and L, X_{10} is selected from the group consisting of Y, D, and V, X_{11} is selected from the group consisting of G, A, and P, X_{12} is selected from the group consisting of M and F, X_{13} is selected from the group consisting of D, X_{14} is selected from the group consisting of V and Y, and B) a light chain complementary determining region (CDRL) selected from at least one of the group consisting of the following: (i) a CDRL3 selected from the CDRL3 within the sequences selected from the group consisting of SEQ ID NOs: 12, 32, 35, and 23, (ii) a CDRL3 that differs in amino

acid sequence from the CDRL3 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRL3 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}$ (SEQ ID NO: 411), wherein X_1 is selected from the group consisting of Q, A, G, and no amino acid, X_2 is selected from the group consisting of S, V, T, and no amino acid, X_3 is selected from the group consisting of Y, N, and W, X_4 is selected from the group consisting of S and D, X_5 is selected from the group consisting of S, Y, and D, X_6 is selected from the group consisting of S and T, X_7 is selected from the group consisting of L and S, X_8 is selected from the group consisting of S, T, and N, X_9 is selected from the group consisting of G, S, and A, X_{10} is selected from the group consisting of S, M, W, and Y, and X_{11} is selected from the group consisting of V. In some embodiments, any of the above amino acids can be replaced by a conservative amino acid substitution.

[0060] In some aspects, the invention comprises an isolated antigen binding protein that binds PCSK9, the antigen binding protein comprises A) a heavy chain complementary determining region (CDRH) selected from at least one of the group consisting of (i) a CDRH1 selected from the CDRH1 within the sequences selected from the group consisting of SEQ ID NOs: 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, and 58, (ii) a CDRH1 that differs in amino acid sequence from the CDRH1 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRH1 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}$ (SEQ ID NO: 412), wherein X_1 is selected from the group consisting of G, P, and A, X_2 is selected from the group consisting of Y, W, F, T, and S, X_3 is selected from the group consisting of T, P, S and A, C, V, L, and I, X_4 is selected from the group consisting of L, F, I, V, M, A, and Y, X_5 is selected from the group consisting of T, P, S, and A, X_6 is selected from the group consisting of S, T, A, and C, X_7 is selected from the group consisting of Y, W, F, T, and S, X_8 is selected from the group consisting of G, P, and A, X_9 is selected from the group consisting of I, L, V, M, A, and F, X_{10} is selected from the group consisting of S, T, A, and C, B) a light chain complementary determining region (CDRL) selected from at least one of the group consisting of: (i) a CDRL1 selected from the CDRL1 within the sequences selected from the group consisting of SEQ ID NOs: 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24, (ii) a CDRL1 that differs in amino acid sequence from the CDRL3 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRL1 amino acid sequence selected from the group consisting of

$X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}$ (SEQ ID NO: 413), wherein, X_1 is selected from the group consisting of T and S, X_2 is selected from the group consisting of G, P, and A, X_3 is selected from the group consisting of T, and S, X_4 is selected from the group consisting of S N, T, A, C, and Q, X_5 is selected from the group consisting of S, T, A, and C, X_6 is selected from the group consisting of D, and E, X_7 is selected from the group consisting of V, I, M, L, F, and A, X_8 is selected from the group consisting of G, P, and A, X_9 is selected from the group consisting of G, A, R, P, V, L, I, K, Q, and N, X_{10} is selected from the group consisting of Y, W, F, T, and S, X_{11} is selected from the group consisting of N, and Q, X_{12} is selected from the group consisting of Y, S, W, F, T, A, and C, X_{13} is selected from the group consisting of V, I, M, L, F, and A, X_{14} is selected from the group consisting of S, T, A, and C.

[0061] In some aspects, the invention comprises an isolated antigen binding protein that binds PCSK9, the antigen binding protein comprising: A) a heavy chain complementary determining region (CDRH) selected from at least one of the group consisting of: (i) a CDRH2 selected from the CDRH2 within the sequences selected from the group consisting of SEQ ID NOs: 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, and 58, (ii) a CDRH2 that differs in amino acid sequence from the CDRH2 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRH2 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}$ $X_{15}X_{16}X_{17}$, (SEQ ID NO: 414), wherein X_1 is selected from the group consisting of W, Y, and F, X_2 is selected from the group consisting of V, I, M, L, F, and A, X_3 is selected from the group consisting of S, T, A, and C, X_4 is selected from the group consisting of A, F, V, L, I, Y, and M, X_5 is selected from the group consisting of Y, W, F, T, and S, X_6 is selected from the group consisting of N and Q, X_7 is selected from the group consisting of G, P, and A, X_8 is selected from the group consisting of N, and Q, X_9 is selected from the group consisting of T, and S, X_{10} is selected from the group consisting of N, and Q, X_{11} is selected from the group consisting of Y, W, F, T, and S, X_{12} is selected from the group consisting of A, V, L, and I, X_{13} is selected from the group consisting of Q, E, N, and D, X_{14} is selected from the group consisting of K, R, Q, and N, X_{15} is selected from the group consisting of L, F, V, I, M, A, and Y, X_{16} is selected from the group consisting of Q, and N, X_{17} is selected from the group consisting of G, P, and A, B) a light chain complementary determining region (CDRL) selected from at least one of the group consisting of: (i) a CDRL2 selected from the CDRL3 within the sequences selected from the group consisting of SEQ ID NOs: 14, 15, 16,

17, 18, 19, 20, 21, 22, 23, and 24, (ii) a CDRL2 that differs in amino acid sequence from the CDRL3 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRL2 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6X_7$ (SEQ ID NO: 415), wherein X_1 is selected from the group consisting of E, and D, X_2 is selected from the group consisting of V, I, M, L, F, and A, X_3 is selected from the group consisting of S, T, A, and C, X_4 is selected from the group consisting of N, and Q, X_5 is selected from the group consisting of R, K, Q, and N, X_6 is selected from the group consisting of P, and A, X_7 is selected from the group consisting of S, T, A, and C.

[0062] In some aspects, the invention comprises an isolated antigen binding protein that binds PCSK9, the antigen binding protein comprising: A) a heavy chain complementary determining region (CDRH) selected from at least one of the group consisting of (i) a CDRH3 selected from the CDRH3 within the sequences selected from the group consisting of SEQ ID NOs: 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, and 58, (ii) a CDRH3 that differs in amino acid sequence from the CDRH3 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRH3 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6$ (SEQ ID NO: 416), wherein X_1 is selected from the group consisting of G, P, A and no amino acid, X_2 is selected from the group consisting of Y, W, F, T, and S, X_3 is selected from the group consisting of G, V, P, A, I, M, L, and F, X_4 is selected from the group consisting of M, L, F, and I, X_5 is selected from the group consisting of D, and E, X_6 is selected from the group consisting of V, I, M, L, F, and A, B) a light chain complementary determining region (CDRL) selected from at least one of the group consisting of: (i) a CDRL3 selected from the CDRL3 within the sequences selected from the group consisting of SEQ ID NOs: 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24, (ii) a CDRL3 that differs in amino acid sequence from the CDRL3 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; and (iii) a CDRL3 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6X_7X_8X_9$ (SEQ ID NO: 417), wherein X_1 is selected from the group consisting of S, N, T, A, C, and Q, X_2 is selected from the group consisting of S, T, A, and C, X_3 is selected from the group consisting of Y, W, F, T, and S, X_4 is selected from the group consisting of T, and S, X_5 is selected from the group consisting of S, T, A, and C, X_6 is selected from the group consisting of S, T, A, and C, X_7 is selected from the group consisting of N, S, Q, T, A, and C, X_8

is selected from the group consisting of M, V, L, F, I, and A, X_9 is selected from the group consisting of V, I, M, L, F, and A.

BRIEF DESCRIPTION OF THE FIGURES

[0063] FIG. 1A depicts an amino acid sequence of the mature form of the PCSK9 with the pro-domain underlined.

[0064] FIGs. $1B_1$-$1B_4$ depict amino acid and nucleic acid sequences of PCSK9 with the pro-domain underlined and the signal sequence in bold.

[0065] FIGs. 2A-2D are sequence comparison tables of various light chains of various antigen binding proteins. FIG. 2C continues the sequence started in FIG. 2A. FIG. 2D continues the sequence started on FIG. 2B.

[0066] FIGs. 3A-3D are sequence comparison tables of various heavy chains of various antigen binding proteins. FIG. 3C continues the sequence started in FIG. 3A. FIG. 3D continues the sequence started on FIG. 3B.

[0067] FIGs. 3E-3JJ depict the amino acid and nucleic acid sequences for the variable domains of some embodiments of the antigen binding proteins.

[0068] FIG. 3KK depicts the amino acid sequences for various constant domains.

[0069] FIGs. 3LL-3BBB depict the amino acid and nucleic acid sequences for the variable domains of some embodiments of the antigen binding proteins.

[0070] FIGs. 3CCC-3JJJ are sequence comparison tables of various heavy and light chains of some embodiments of the antigen binding proteins.

[0071] FIG. 4A is a binding curve of an antigen bindng protein to human PCSK9.

[0072] FIG. 4B is a binding curve of an antigen bindng protein to human PCSK9.

[0073] FIG. 4C is a binding curve of an antigen bindng protein to cynomolgus PCSK9.

[0074] FIG. 4D is a binding curve of an antigen bindng protein to cynomolgus PCSK9.

[0075] FIG. 4E is a binding curve of an antigen bindng protein to mouse PCSK9.

[0076] FIG. 4F is a binding curve of an antigen bindng protein to mouse PCSK9.

[0077] FIG. 5A depicts the results of an SDS PAGE experiement involving PCSK9 and various antigen binding proteins demonstrating the relative purity and concentration of the proteins.

[0078] FIG. 5B and 5C depict graphs from biacore solution equilibrium assays for 21B12.

[0079] FIG. 5D depicts the graph of the kinetics from a biacore capture assay.

[0080] FIG. 5E depicts a bar graph depicting binning results for three ABPs.

[0081] FIG. 6A is an inhibition curve of antigen binding protein 31H4 IgG2 to PCSK9 in an in vitro PCSK9:LDLR binding assay

[0082] FIG. 6B is an inhibition curve of antigen binding protein 31H4 IgG4 to PCSK9 in an in vitro PCSK9:LDLR binding assay.

[0083] FIG. 6C is an inhibition curve of antigen binding protein 21B12 IgG2 to PCSK9 in an in vitro PCSK9:LDLR binding assay.

[0084] FIG. 6D is an inhibition curve of antigen binding protein 21B12 IgG4 to PCSK9 in an in vitro PCSK9:LDLR binding assay.

[0085] FIG. 7A is an inhibition curve of antigen binding protein 31H4 IgG2 in the cell LDL uptake assay showing the effect of the ABP to reduce the LDL uptake blocking effects of PCSK9

[0086] FIG. 7B is an inhibition curve of antigen binding protein 31H4 IgG4 in the cell LDL uptake assay showing the effect of the ABP to reduce the LDL uptake blocking effects of PCSK9

[0087] FIG. 7C is an inhibition curve of antigen binding protein 21B12 IgG2 in the cell LDL uptake assay showing the effect of the ABP to reduce the LDL uptake blocking effects of PCSK9

[0088] FIG. 7D is an inhibition curve of antigen binding protein 21B12 IgG4 in the cell LDL uptake assay showing the effect of the ABP to reduce the LDL uptake blocking effects of PCSK9

[0089] FIG. 8A is a graph depicting the serum cholesterol lowering ability in mice of ABP 31H4, changes relative to the IgG control treated mice (* $p < 0.01$).

[0090] FIG. 8B is a graph depicting the serum cholesterol lowering ability in mice of ABP 31H4, changes relative to time = zero hours (# p, 0.05).

[0091] FIG. 8C is a graph depicting the effect of ABP 31H4 on HDL cholesterol levels in C57B1/6 mice (* $p < 0.01$).

[0092] FIG. 8D is a graph depicting the effect of ABP 31H4 on HDL cholesterol levels in C57Bl/6 mice (# $p < 0.05$).

[0093] FIG. 9 depicts a western blot analysis of the ability of ABP 31H4 to enhance the amount of liver LDLR protein present after various time points.

[0094] FIG. 10A is a graph depicting the ability of an antigen binding protein 31H4 to lower total serum cholesterol in wild type mice, relative.

[0095] FIG. 10B is a graph depicting the ability of an antigen binding protein 31H4 to lower HDL in wild type mice.

[0096] FIG. 10C is a graph depicting the serum cholesterol lowering ability of various antigen binding proteins 31H4 and 16F12.

[0097] FIG. 11A depicts an injection protocol for testing the duration and ability of antigen binding proteins to lower serum cholesterol.

[0098] FIG. 11B is a graph depicting the results of the protocol in FIG. 11A.

[0099] FIG. 12A depicts LDLR levels in response to the combination of a statin and ABP 21B12 in HepG2 cells.

[0100] FIG. 12B depicts LDLR levels in response to the combination of a statin and ABP 31H4 in HepG2 cells.

[0101] FIG. 12C depicts LDLR levels in response to the combination of a statin and ABP 25A7.1, a nonneutralizing antibody, (in contrast the "25A7" a neutralizing antibody) in HepG2 cells.

[0102] FIG. 12D depicts LDLR levels in response to the combination of a statin and ABP 21B12 in HepG2 cells overexpressing PCSK9.

[0103] FIG. 12E depicts LDLR levels in response to the combination of a statin and ABP 31H4 in HepG2 cells overexpressing PCSK9.

[0104] FIG. 12F depicts LDLR levels in response to the combination of a statin and ABP 25A7.1, a nonneutralizing antibody, (in contrast the "25A7" a neutralizing antibody) in HepG2 cells overexpressing PCSK9.

[0105] FIG. 13A depicts the various light chain amino acid sequences of various ABPs to PCSK9. The dots (.) indicate no amino acid.

[0106] FIG. 13B depicts a light chain cladogram for various ABPs to PCSK9.

[0107] FIG. 13C depicts the various heavy chain amino acid sequences of various ABPs to PCSK9. The dots (.) indicate no amino acid.

[0108] FIG. 13D depicts a heavy chain dendrogram for various ABPs to PCSK9.

[0109] FIG. 13E depicts a comparison of light and heavy CDRs and designation of groups from which to derive consensus.

[0110] FIG. 13F depicts the consensus sequences for Groups 1 and 2.

[0111] FIG. 13G depicts the consensus sequences for Groups 3 and 4.

[0112] FIG. 13H depicts the consensus sequences for Groups 1 and 2. The dots (.) indicated identical residues.

[0113] FIG. 13I depicts the consensus sequences for Group 2. The dots (.) indicated identical residues.

[0114] FIG. 13J depicts the consensus sequences for Groups 3 and 4. The dots (.) indicated identical residues.

[0115] FIG. 14A is a graph depicting *in vivo* LDL lowering ability of various ABPs (at 10 mg/kg).

[0116] FIG. 14B is a graph depicting *in vivo* LDL lowering ability of various ABPs (at 30 mg/kg).

[0117] FIG. 15A and FIG. 15B are sequence comparison tables of various light chains of various embodiments of antigen binding proteins. FIG. 15B continues the sequence started in FIG. 15A.

[0118] FIG. 15C and FIG. 15D are sequence comparison tables of various light chains of various embodiments of antigen binding proteins. FIG. 15D continues the sequence started in FIG. 15C.

[0119] FIG. 16A is a depiction of a gel used to test the ability of Ab 21B12 to bind to the ProCat or VD sections of PCSK9.

[0120] FIG. 16B is a depiction of a gel used to test the ability of Ab 31H4 to bind to the ProCat or VD sections of PCSK9.

[0121] FIG. 17 is a depiction of the structure of PCSK9 and the EGFa section of LDLR.

[0122] FIG. 18A is a depiction of the structure of PCSK9 and the 31H4 Ab.

[0123] FIG. 18B is a depiction of the structure of PCSK9 and the 31H4 Ab.

[0124] FIG. 19A is a depiction of the structure of PCSK9, the 31H4 Ab, and the 21B12 Ab.

[0125] FIG. 19B is a depiction of the structure of PCSK9 and the 21B12 Ab.

[0126] FIG. 20A is a depiction of the structure of PCSK9 and EGFa from the LDLR superimposed with the structure of antibodies 31H4 and 21B12 bound to PCSK9.

[0127] FIG. 20B is a depiction of the structural model of PCSK9 and LDLR.

[0128] FIG. 20C is a depiction of the structural model of PCSK9 and LDLR from an alternative perspective.

[0129] FIG. 20D is a depiction of the structural model of PCSK9 and LDLR with structural representations of 31H4 and 21B12 included.

[0130] FIG. 20E is a depiction of the structural model in FIG. 20D, rotated 90 degrees about the noted axis.

[0131] FIG. 20F is a depiction of the structural model in FIG. 20D rotated 180 degrees about the noted axis.

[0132] FIG. 21A is a depiction of the structure of PCSK9 and 31A4.

[0133] FIG. 21B is a depiction of the structure of PCSK9 and 31A4.

[0134] FIG. 21C is a depiction of the structure of PCSK9 and 31A4.

[0135] FIG. 21D is a depiction of the structural model of full length PCSK9 and 31A4.

[0136] FIG. 22 is a set of ABP sequences identifying various differences between the human ABP sequences and the ABP sequences that were raised in E. coli and used for the crystal structures.

[0137] FIG. 23 is a table of the various binning results.

[0138] FIG. 23A is a first part of a table depicting the various binning results.

[0139] FIG. 23B is a second part of a table depicting the various binning results.

[0140] FIG. 23C is a third part of a table depicting the various binning results.

[0141] FIG. 23D is a fourth part of a table depicting the various binning results.

[0142] FIG. 24A is a depiction of a western blot under non-reduced conditions.

[0143] FIG. 24B is a depiction of a western blot under reduced conditions.

[0144] FIG. 25A is a depiction of the surface coverage of PCSK9.

[0145] FIG. 25B is a depiction of the surface coverage of PCSK9.

[0146] FIG. 25C is a depiction of the surface coverage of PCSK9.

[0147] FIG. 25D is a depiction of the surface coverage of PCSK9.

[0148] FIG. 25E is a depiction of the surface coverage of PCSK9.

[0149] FIG. 25F is a depiction of the surface coverage of PCSK9.

[0150] FIG. 26 is a sequence comparison of the PCSK9 amino acid sequence and all of the residues that were mutated in PCSK9 variants to examine the epitopes of the various antibodies.

[0151] FIG. 27A depicts the 21B12 epitope hits, as mapped onto a crystal structure of PCSK9 with the 21B12.

[0152] FIG. 27B depicts the 31H4 epitope hits, as mapped ont a crystal structure of PCSK9 with 31H4 and 21B1.

[0153] FIG. 27C depicts the 31A4 epitope hits, as mapped onto a crystal structure of PCSK9 with 31H4 and 21B12.

[0154] FIG. 27D depicts the 12H11 epitope hits, as mapped onto the crystal structure of PCSK9 with 31H4 and 21B12.

[0155] FIG. 27E depicts the 3C4 epitope hits, as mapped onto the crystal structure of PCSK9 with 31H4 and 21B12.

[0156] FIG. 28A is a graph demonstrating the binding ability of the various ABPs to various parts of PCSK9.

[0157] FIG. 28B is a graph demonstrating the binding ability of the various ABPs to various parts of PCSK9.

[0158] FIG. 28C is a graph comparing the LDLR binding ability of two ABPs.

[0159] FIG. 28D is a graph comparing the cell LDL uptake activity of two ABPs.

DETAILED DESCRIPTION OF CERTAIN EXEMPLARY EMBODIMENTS

[0160] Antigen binding proteins (such as antibodies and functional binding fragments thereof) that bind to PCSK9 are disclosed herein. In some embodiments, the antigen binding proteins bind to PCSK9 and prevent PCSK9 from functioning in various ways. In some embodiments, the antigen binding proteins block or reduce the ability of PCSK9 to interact with other substances. For example, in some embodiments, the antigen binding protein binds to

PCSK9 in a manner that prevents or reduces the likelihood that PCSK9 will bind to LDLR. In other embodiments, antigen binding proteins bind to PCSK9 but do not block PCSK9's ability to interact with LDLR. In some embodiments, the antigen binding proteins are human monoclonal antibodies.

[0161] As will be appreciated by one of skill in the art, in light of the present disclosure, altering the interactions between PCSK9 and LDLR can increase the amount of LDLR available for binding to LDL, which in turn decreases the amount of serum LDL in a subject, resulting in a reduction in the subject's serum cholesterol level. As such, antigen binding proteins to PCSK9 can be used in various methods and compositions for treating subjects with elevated serum cholesterol levels, at risk of elevated serum cholesterol levels, or which could benefit from a reduction in their serum cholesterol levels. Thus, various methods and techniques for lowering, maintaining, or preventing an increase in serum cholesterol are also described herein. In some embodiments, the antigen binding protein allows for binding between PCSK9 and LDLR, but the antigen binding protein prevents or reduces the adverse activity of PCSK9 on LDLR. In some embodiments, the antigen binding protein prevents or reduces the binding of PCSK9 to LDLR.

[0162] For convenience, the following sections generally outline the various meanings of the terms used herein. Following this discussion, general aspects regarding antigen binding proteins are discussed, followed by specific examples demonstrating the properties of various embodiments of the antigen binding proteins and how they can be employed.

Definitions and Embodiments

[0163] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention as claimed. In this application, the use of the singular includes the plural unless specifically stated otherwise. In this application, the use of "or" means "and/or" unless stated otherwise. Furthermore, the use of the term "including", as well as other forms, such as "includes" and "included", is not limiting. Also, terms such as "element" or "component" encompass both elements and components comprising one unit and elements and components that comprise more than one subunit unless specifically stated otherwise. Also, the use of the term "portion" can include part of a moiety or the entire moiety.

[0164] The section headings used herein are for organizational purposes only and are not to be construed as limiting the subject matter described. All documents, or portions of documents, cited in this application, including but not limited to patents, patent applications, articles, books, and treatises, are hereby expressly incorporated by reference in their entirety for any purpose. As utilized in accordance with the present disclosure, the following terms, unless otherwise indicated, shall be understood to have the following meanings:

[0165] The term "proprotein convertase subtilisin kexin type 9" or "PCSK9" refers to a polypeptide as set forth in SEQ ID NO: 1 and/or 3 or fragments thereof, as well as related polypeptides, which include, but are not limited to, allelic variants, splice variants, derivative variants, substitution variants, deletion variants, and/or insertion variants including the addition of an N-terminal methionine, fusion polypeptides, and interspecies homologs. In certain embodiments, a PCSK9 polypeptide includes terminal residues, such as, but not limited to, leader sequence residues, targeting residues, amino terminal methionine residues, lysine residues, tag residues and/or fusion protein residues. "PCSK9" has also been referred to as FH3, NARC1, HCHOLA3, proprotein convertase subtilisin/kexin type 9, and neural apoptosis regulated convertase 1. The PCSK9 gene encodes a proprotein convertase protein that belongs to the proteinase K subfamily of the secretory subtilase family. The term "PCSK9" denotes both the proprotein and the product generated following autocatalysis of the proprotein. When only the autocatalyzed product is being referred to (such as for an antigen binding protein that selectively binds to the cleaved PCSK9), the protein can be referred to as the "mature," "cleaved", "processed" or "active" PCSK9. When only the inactive form is being referred to, the protein can be referred to as the "inactive", "pro-form", or "unprocessed" form of PCSK9. The term PCSK9 as used herein also includes naturally occurring alleles, such as the mutations D374Y, S127R and F216L. The term PCSK9 also encompasses PCSK9 molecules incorporating post-translational modifications of the PCSK9 amino acid sequence, such as PCSK9 sequences that have been glycosylated, PEGylated, PCSK9 sequences from which its signal sequence has been cleaved, PCSK9 sequence from which its pro domain has been cleaved from the catalytic domain but not separated from the catalytic domain (e.g., FIGs. 1A and 1B).

[0166] The term "PCSK9 activity" includes any biological effect of PCSK9. In certain embodiments, PCSK9 activity includes the ability of PCSK9 to interact or bind to a substrate or receptor. In some embodiments, PCSK9 activity is represented by the ability of

PCSK9 to bind to a LDL receptor (LDLR). In some embodiments, PCSK9 binds to and catalyzes a reaction involving LDLR. In some embodiments, PCSK9 activity includes the ability of PCSK9 to alter (e.g., reduce) the availability of LDLR. In some embodiments, PCSK9 activity includes the ability of PCSK9 to increase the amount of LDL in a subject. In some embodiments, PCSK9 activity includes the ability of PCSK9 to decrease the amount of LDLR that is available to bind to LDL. In some embodiments, "PCSK9 activity" includes any biological activity resulting from PCSK9 signaling. Exemplary activities include, but are not limited to, PCSK9 binding to LDLR, PCSK9 enzyme activity that cleaves LDLR or other proteins, PCSK9 binding to proteins other than LDLR that facilitate PCSK9 action, PCSK9 altering APOB secretion (Sun X-M et al, "Evidence for effect of mutant PCSK9 on apoliprotein B secretion as the cause of unusually severe dominant hypercholesterolemia, Human Molecular Genetics 14: 1161-1169, 2005 and Ouguerram K et al, "Apolipoprotein B100 metabolism in autosomal-dominant hypercholesterolemia related to mutations in PCSK9, Arterioscler thromb Vasc Biol. 24: 1448-1453, 2004), PCSK9's role in liver regeneration and neuronal cell differentiation (Seidah NG et al, "The secretory proprotein convertase neural apoptosis-regulated convertase 1 (NARC-1): Liver regeneration and neuronal differentiation" PNAS 100: 928-933, 2003), and PCSK9s role in hepatic glucose metabolism (Costet et al., "Hepatic PCSK9 expression is regulated by nutritional status via insulin and sterol regulatory element-binding protein 1c" J. Biol. Chem. 281(10):6211-18, 2006).

[0167] The term "hypercholesterolemia," as used herein, refers to a condition in which cholesterol levels are elevated above a desired level. In some embodiments, this denotes that serum cholesterol levels are elevated. In some embodiments, the desired level takes into account various "risk factors" that are known to one of skill in the art (and are described or referenced herein).

[0168] The term "polynucleotide" or "nucleic acid" includes both single-stranded and double-stranded nucleotide polymers. The nucleotides comprising the polynucleotide can be ribonucleotides or deoxyribonucleotides or a modified form of either type of nucleotide. Said modifications include base modifications such as bromouridine and inosine derivatives, ribose modifications such as 2',3'-dideoxyribose, and internucleotide linkage modifications such as phosphorothioate, phosphorodithioate, phosphoroselenoate, phosphorodiselenoate, phosphoroanilothioate, phoshoraniladate and phosphoroamidate.

[0169] The term "oligonucleotide" means a polynucleotide comprising 200 or fewer nucleotides. In some embodiments, oligonucleotides are 10 to 60 bases in length. In other embodiments, oligonucleotides are 12, 13, 14, 15, 16, 17, 18, 19, or 20 to 40 nucleotides in length. Oligonucleotides can be single stranded or double stranded, *e.g.*, for use in the construction of a mutant gene. Oligonucleotides can be sense or antisense oligonucleotides. An oligonucleotide can include a label, including a radiolabel, a fluorescent label, a hapten or an antigenic label, for detection assays. Oligonucleotides can be used, for example, as PCR primers, cloning primers or hybridization probes.

[0170] An "isolated nucleic acid molecule" means a DNA or RNA of genomic, mRNA, cDNA, or synthetic origin or some combination thereof which is not associated with all or a portion of a polynucleotide in which the isolated polynucleotide is found in nature, or is linked to a polynucleotide to which it is not linked in nature. For purposes of this disclosure, it should be understood that "a nucleic acid molecule comprising" a particular nucleotide sequence does not encompass intact chromosomes. Isolated nucleic acid molecules "comprising" specified nucleic acid sequences can include, in addition to the specified sequences, coding sequences for up to ten or even up to twenty other proteins or portions thereof, or can include operably linked regulatory sequences that control expression of the coding region of the recited nucleic acid sequences, and/or can include vector sequences.

[0171] Unless specified otherwise, the left-hand end of any single-stranded polynucleotide sequence discussed herein is the 5' end; the left-hand direction of double-stranded polynucleotide sequences is referred to as the 5' direction. The direction of 5' to 3' addition of nascent RNA transcripts is referred to as the transcription direction; sequence regions on the DNA strand having the same sequence as the RNA transcript that are 5' to the 5' end of the RNA transcript are referred to as "upstream sequences;" sequence regions on the DNA strand having the same sequence as the RNA transcript that are 3' to the 3' end of the RNA transcript are referred to as "downstream sequences."

[0172] The term "control sequence" refers to a polynucleotide sequence that can affect the expression and processing of coding sequences to which it is ligated. The nature of such control sequences can depend upon the host organism. In particular embodiments, control sequences for prokaryotes can include a promoter, a ribosomal binding site, and a transcription termination sequence. For example, control sequences for eukaryotes can include promoters

comprising one or a plurality of recognition sites for transcription factors, transcription enhancer sequences, and transcription termination sequence. "Control sequences" can include leader sequences and/or fusion partner sequences.

[0173] The term "vector" means any molecule or entity (*e.g.*, nucleic acid, plasmid, bacteriophage or virus) used to transfer protein coding information into a host cell.

[0174] The term "expression vector" or "expression construct" refers to a vector that is suitable for transformation of a host cell and contains nucleic acid sequences that direct and/or control (in conjunction with the host cell) expression of one or more heterologous coding regions operatively linked thereto. An expression construct can include, but is not limited to, sequences that affect or control transcription, translation, and, if introns are present, affect RNA splicing of a coding region operably linked thereto.

[0175] As used herein, "operably linked" means that the components to which the term is applied are in a relationship that allows them to carry out their inherent functions under suitable conditions. For example, a control sequence in a vector that is "operably linked" to a protein coding sequence is ligated thereto so that expression of the protein coding sequence is achieved under conditions compatible with the transcriptional activity of the control sequences.

[0176] The term "host cell" means a cell that has been transformed, or is capable of being transformed, with a nucleic acid sequence and thereby expresses a gene of interest. The term includes the progeny of the parent cell, whether or not the progeny is identical in morphology or in genetic make-up to the original parent cell, so long as the gene of interest is present.

[0177] The term "transfection" means the uptake of foreign or exogenous DNA by a cell, and a cell has been "transfected" when the exogenous DNA has been introduced inside the cell membrane. A number of transfection techniques are well known in the art and are disclosed herein. *See, e.g.*, Graham *et al.*, 1973, *Virology* 52:456; Sambrook *et al.*, 2001, Molecular Cloning: A Laboratory Manual, *supra*; Davis *et al.*, 1986, *Basic Methods in Molecular Biology*, Elsevier; Chu *et al.*, 1981, *Gene* 13:197. Such techniques can be used to introduce one or more exogenous DNA moieties into suitable host cells.

[0178] The term "transformation" refers to a change in a cell's genetic characteristics, and a cell has been transformed when it has been modified to contain new DNA or RNA. For example, a cell is transformed where it is genetically modified from its native state by

introducing new genetic material *via* transfection, transduction, or other techniques. Following transfection or transduction, the transforming DNA can recombine with that of the cell by physically integrating into a chromosome of the cell, or can be maintained transiently as an episomal element without being replicated, or can replicate independently as a plasmid. A cell is considered to have been "stably transformed" when the transforming DNA is replicated with the division of the cell.

[0179] The terms "polypeptide" or "protein" means a macromolecule having the amino acid sequence of a native protein, that is, a protein produced by a naturally-occurring and non-recombinant cell; or it is produced by a genetically-engineered or recombinant cell, and comprise molecules having the amino acid sequence of the native protein, or molecules having deletions from, additions to, and/or substitutions of one or more amino acids of the native sequence. The term also includes amino acid polymers in which one or more amino acids are chemical analogs of a corresponding naturally-occurring amino acid and polymers. The terms "polypeptide" and "protein" specifically encompass PCSK9 antigen binding proteins, antibodies, or sequences that have deletions from, additions to, and/or substitutions of one or more amino acid of antigen-binding protein. The term "polypeptide fragment" refers to a polypeptide that has an amino-terminal deletion, a carboxyl-terminal deletion, and/or an internal deletion as compared with the full-length native protein. Such fragments can also contain modified amino acids as compared with the native protein. In certain embodiments, fragments are about five to 500 amino acids long. For example, fragments can be at least 5, 6, 8, 10, 14, 20, 50, 70, 100, 110, 150, 200, 250, 300, 350, 400, or 450 amino acids long. Useful polypeptide fragments include immunologically functional fragments of antibodies, including binding domains. In the case of a PCSK9-binding antibody, useful fragments include but are not limited to a CDR region, a variable domain of a heavy and/or light chain, a portion of an antibody chain or just its variable region including two CDRs, and the like.

[0180] The term "isolated protein" referred means that a subject protein (1) is free of at least some other proteins with which it would normally be found, (2) is essentially free of other proteins from the same source, *e.g.*, from the same species, (3) is expressed by a cell from a different species, (4) has been separated from at least about 50 percent of polynucleotides, lipids, carbohydrates, or other materials with which it is associated in nature, (5) is operably associated (by covalent or noncovalent interaction) with a polypeptide with which it is not associated in

nature, or (6) does not occur in nature. Typically, an "isolated protein" constitutes at least about 5%, at least about 10%, at least about 25%, or at least about 50% of a given sample. Genomic DNA, cDNA, mRNA or other RNA, of synthetic origin, or any combination thereof can encode such an isolated protein. Preferably, the isolated protein is substantially free from proteins or polypeptides or other contaminants that are found in its natural environment that would interfere with its therapeutic, diagnostic, prophylactic, research or other use.

[0181] The term "amino acid" includes its normal meaning in the art.

[0182] A "variant" of a polypeptide (*e.g.*, an antigen binding protein, or an antibody) comprises an amino acid sequence wherein one or more amino acid residues are inserted into, deleted from and/or substituted into the amino acid sequence relative to another polypeptide sequence. Variants include fusion proteins.

[0183] The term "identity" refers to a relationship between the sequences of two or more polypeptide molecules or two or more nucleic acid molecules, as determined by aligning and comparing the sequences. "Percent identity" means the percent of identical residues between the amino acids or nucleotides in the compared molecules and is calculated based on the size of the smallest of the molecules being compared. For these calculations, gaps in alignments (if any) are preferably addressed by a particular mathematical model or computer program (*i.e.*, an "algorithm"). Methods that can be used to calculate the identity of the aligned nucleic acids or polypeptides include those described in *Computational Molecular Biology*, (Lesk, A. M., ed.), 1988, New York: Oxford University Press; Biocomputing Informatics and Genome Projects, (Smith, D. W., ed.), 1993, New York: Academic Press; Computer Analysis of Sequence Data, Part I, (Griffin, A. M., and Griffin, H. G., eds.), 1994, New Jersey: Humana Press; von Heinje, G., 1987, Sequence Analysis in Molecular Biology, New York: Academic Press; Sequence Analysis Primer, (Gribskov, M. and Devereux, J., eds.), 1991, New York: M. Stockton Press; and Carillo *et al.*, 1988, *SIAM J. Applied Math.* 48:1073.

[0184] In calculating percent identity, the sequences being compared are typically aligned in a way that gives the largest match between the sequences. One example of a computer program that can be used to determine percent identity is the GCG program package, which includes GAP (Devereux *et al.*, 1984, *Nucl. Acid Res.* 12:387; Genetics Computer Group, University of Wisconsin, Madison, WI). The computer algorithm GAP is used to align the two polypeptides or polynucleotides for which the percent sequence identity is to be determined. The

sequences are aligned for optimal matching of their respective amino acid or nucleotide (the "matched span", as determined by the algorithm). A gap opening penalty (which is calculated as 3x the average diagonal, wherein the "average diagonal" is the average of the diagonal of the comparison matrix being used; the "diagonal" is the score or number assigned to each perfect amino acid match by the particular comparison matrix) and a gap extension penalty (which is usually 1/10 times the gap opening penalty), as well as a comparison matrix such as PAM 250 or BLOSUM 62 are used in conjunction with the algorithm. In certain embodiments, a standard comparison matrix (*see*, Dayhoff *et al.*, 1978, *Atlas of Protein Sequence and Structure* 5:345-352 for the PAM 250 comparison matrix; Henikoff *et al.*, 1992, *Proc. Natl. Acad. Sci. U.S.A.* 89:10915-10919 for the BLOSUM 62 comparison matrix) is also used by the algorithm.

[0185] Examples of parameters that can be employed in determining percent identity for polypeptides or nucleotide sequences using the GAP program are the following:

- Algorithm: Needleman *et al.*, 1970, *J. Mol. Biol.* 48:443-453
- Comparison matrix: BLOSUM 62 from Henikoff *et al.*, 1992, *supra*
- Gap Penalty: 12 (but with no penalty for end gaps)
- Gap Length Penalty: 4
- Threshold of Similarity: 0

[0186] Certain alignment schemes for aligning two amino acid sequences may result in matching of only a short region of the two sequences, and this small aligned region may have very high sequence identity even though there is no significant relationship between the two full-length sequences. Accordingly, the selected alignment method (GAP program) can be adjusted if so desired to result in an alignment that spans at least 50 or other number of contiguous amino acids of the target polypeptide.

[0187] As used herein, the twenty conventional (*e.g.*, naturally occurring) amino acids and their abbreviations follow conventional usage. See *Immunology--A Synthesis* (2nd Edition, E. S. Golub and D. R. Gren, Eds., Sinauer Associates, Sunderland, Mass. (1991)), which is incorporated herein by reference for any purpose. Stereoisomers (e.g., D-amino acids) of the twenty conventional amino acids, unnatural amino acids such as α-, α-disubstituted amino acids, N-alkyl amino acids, lactic acid, and other unconventional amino acids can also be suitable components for polypeptides of the present invention. Examples of unconventional amino acids include: 4-hydroxyproline, γ-carboxyglutamate, ε-N,N,N-trimethyllysine, ε-N-acetyllysine, O-

phosphoserine, N-acetylserine, N-formylmethionine, 3-methylhistidine, 5-hydroxylysine, σ-N-methylarginine, and other similar amino acids and imino acids (e.g., 4-hydroxyproline). In the polypeptide notation used herein, the left-hand direction is the amino terminal direction and the right-hand direction is the carboxy-terminal direction, in accordance with standard usage and convention.

[0188] Similarly, unless specified otherwise, the left-hand end of single-stranded polynucleotide sequences is the 5' end; the left-hand direction of double-stranded polynucleotide sequences is referred to as the 5' direction. The direction of 5' to 3' addition of nascent RNA transcripts is referred to as the transcription direction; sequence regions on the DNA strand having the same sequence as the RNA and which are 5' to the 5' end of the RNA transcript are referred to as "upstream sequences"; sequence regions on the DNA strand having the same sequence as the RNA and which are 3' to the 3' end of the RNA transcript are referred to as "downstream sequences."

[0189] Conservative amino acid substitutions can encompass non-naturally occurring amino acid residues, which are typically incorporated by chemical peptide synthesis rather than by synthesis in biological systems. These include peptidomimetics and other reversed or inverted forms of amino acid moieties.

[0190] Naturally occurring residues can be divided into classes based on common side chain properties:

1) hydrophobic: norleucine, Met, Ala, Val, Leu, Ile;
2) neutral hydrophilic: Cys, Ser, Thr, Asn, Gln;
3) acidic: Asp, Glu;
4) basic: His, Lys, Arg;
5) residues that influence chain orientation: Gly, Pro; and
6) aromatic: Trp, Tyr, Phe.

For example, non-conservative substitutions can involve the exchange of a member of one of these classes for a member from another class. Such substituted residues can be introduced, for example, into regions of a human antibody that are homologous with non-human antibodies, or into the non-homologous regions of the molecule.

[0191] In making changes to the antigen binding protein or the PCSK9 protein, according to certain embodiments, the hydropathic index of amino acids can be considered.

Each amino acid has been assigned a hydropathic index on the basis of its hydrophobicity and charge characteristics. They are: isoleucine (+4.5); valine (+4.2); leucine (+3.8); phenylalanine (+2.8); cysteine/cystine (+2.5); methionine (+1.9); alanine (+1.8); glycine (-0.4); threonine (-0.7); serine (-0.8); tryptophan (-0.9); tyrosine (-1.3); proline (-1.6); histidine (-3.2); glutamate (-3.5); glutamine (-3.5); aspartate (-3.5); asparagine (-3.5); lysine (-3.9); and arginine (-4.5).

[0192] The importance of the hydropathic amino acid index in conferring interactive biological function on a protein is understood in the art. Kyte *et al.*, J. Mol. Biol., 157:105-131 (1982). It is known that certain amino acids can be substituted for other amino acids having a similar hydropathic index or score and still retain a similar biological activity. In making changes based upon the hydropathic index, in certain embodiments, the substitution of amino acids whose hydropathic indices are within ±2 is included. In certain embodiments, those which are within ±1 are included, and in certain embodiments, those within ±0.5 are included.

[0193] It is also understood in the art that the substitution of like amino acids can be made effectively on the basis of hydrophilicity, particularly where the biologically functional protein or peptide thereby created is intended for use in immunological embodiments, as in the present case. In certain embodiments, the greatest local average hydrophilicity of a protein, as governed by the hydrophilicity of its adjacent amino acids, correlates with its immunogenicity and antigenicity, i.e., with a biological property of the protein.

[0194] The following hydrophilicity values have been assigned to these amino acid residues: arginine (+3.0); lysine (+3.0); aspartate (+3.0 ± 1); glutamate (+3.0 ± 1); serine (+0.3); asparagine (+0.2); glutamine (+0.2); glycine (0); threonine (-0.4); proline (-0.5 ± 1); alanine (-0.5); histidine (-0.5); cysteine (-1.0); methionine (-1.3); valine (-1.5); leucine (-1.8); isoleucine (-1.8); tyrosine (-2.3); phenylalanine (-2.5) and tryptophan (-3.4). In making changes based upon similar hydrophilicity values, in certain embodiments, the substitution of amino acids whose hydrophilicity values are within ±2 is included, in certain embodiments, those which are within ±1 are included, and in certain embodiments, those within ±0.5 are included. One can also identify epitopes from primary amino acid sequences on the basis of hydrophilicity. These regions are also referred to as "epitopic core regions."

[0195] Exemplary amino acid substitutions are set forth in Table 1.

TABLE 1

Amino Acid Substitutions

Original Residues	Exemplary Substitutions	Preferred Substitutions
Ala	Val, Leu, Ile	Val
Arg	Lys, Gln, Asn	Lys
Asn	Gln	Gln
Asp	Glu	Glu
Cys	Ser, Ala	Ser
Gln	Asn	Asn
Glu	Asp	Asp
Gly	Pro, Ala	Ala
His	Asn, Gln, Lys, Arg	Arg
Ile	Leu, Val, Met, Ala, Phe, Norleucine	Leu
Leu	Norleucine, Ile, Val, Met, Ala, Phe	Ile
Lys	Arg, 1,4 Diamino-butyric Acid, Gln, Asn	Arg
Met	Leu, Phe, Ile	Leu
Phe	Leu, Val, Ile, Ala, Tyr	Leu
Pro	Ala	Gly
Ser	Thr, Ala, Cys	Thr
Thr	Ser	Ser
Trp	Tyr, Phe	Tyr
Tyr	Trp, Phe, Thr, Ser	Phe
Val	Ile, Met, Leu, Phe, Ala, Norleucine	Leu

[0196] The term "derivative" refers to a molecule that includes a chemical modification other than an insertion, deletion, or substitution of amino acids (or nucleic acids). In certain embodiments, derivatives comprise covalent modifications, including, but not limited

to, chemical bonding with polymers, lipids, or other organic or inorganic moieties. In certain embodiments, a chemically modified antigen binding protein can have a greater circulating half-life than an antigen binding protein that is not chemically modified. In certain embodiments, a chemically modified antigen binding protein can have improved targeting capacity for desired cells, tissues, and/or organs. In some embodiments, a derivative antigen binding protein is covalently modified to include one or more water soluble polymer attachments, including, but not limited to, polyethylene glycol, polyoxyethylene glycol, or polypropylene glycol. *See, e.g.*, U.S. Patent Nos: 4,640,835, 4,496,689, 4,301,144, 4,670,417, 4,791,192 and 4,179,337. In certain embodiments, a derivative antigen binding protein comprises one or more polymer, including, but not limited to, monomethoxy-polyethylene glycol, dextran, cellulose, or other carbohydrate based polymers, poly-(N-vinyl pyrrolidone)-polyethylene glycol, propylene glycol homopolymers, a polypropylene oxide/ethylene oxide co-polymer, polyoxyethylated polyols (e.g., glycerol) and polyvinyl alcohol, as well as mixtures of such polymers.

[0197] In certain embodiments, a derivative is covalently modified with polyethylene glycol (PEG) subunits. In certain embodiments, one or more water-soluble polymer is bonded at one or more specific position, for example at the amino terminus, of a derivative. In certain embodiments, one or more water-soluble polymer is randomly attached to one or more side chains of a derivative. In certain embodiments, PEG is used to improve the therapeutic capacity for an antigen binding protein. In certain embodiments, PEG is used to improve the therapeutic capacity for a humanized antibody. Certain such methods are discussed, for example, in U.S. Patent No. 6,133,426, which is hereby incorporated by reference for any purpose.

[0198] Peptide analogs are commonly used in the pharmaceutical industry as non-peptide drugs with properties analogous to those of the template peptide. These types of non-peptide compound are termed "peptide mimetics" or "peptidomimetics." Fauchere, J., Adv. Drug Res., 15:29 (1986); Veber & Freidinger, TINS, p.392 (1985); and Evans *et al.*, J. Med. Chem., 30:1229 (1987), which are incorporated herein by reference for any purpose. Such compounds are often developed with the aid of computerized molecular modeling. Peptide mimetics that are structurally similar to therapeutically useful peptides can be used to produce a similar therapeutic or prophylactic effect. Generally, peptidomimetics are structurally similar to a paradigm polypeptide (i.e., a polypeptide that has a biochemical property or pharmacological activity), such as human antibody, but have one or more peptide linkages optionally replaced by

a linkage selected from: --CH_2 NH--, --CH_2 S--, --CH_2 -CH_2 --, --CH=CH-(cis and trans), --$COCH_2$ --, --CH(OH)CH_2 --, and --CH_2 SO--, by methods well known in the art. Systematic substitution of one or more amino acids of a consensus sequence with a D-amino acid of the same type (e.g., D-lysine in place of L-lysine) can be used in certain embodiments to generate more stable peptides. In addition, constrained peptides comprising a consensus sequence or a substantially identical consensus sequence variation can be generated by methods known in the art (Rizo and Gierasch, Ann. Rev. Biochem., 61:387 (1992), incorporated herein by reference for any purpose); for example, by adding internal cysteine residues capable of forming intramolecular disulfide bridges which cyclize the peptide.

[0199] The term "naturally occurring" as used throughout the specification in connection with biological materials such as polypeptides, nucleic acids, host cells, and the like, refers to materials which are found in nature or a form of the materials that is found in nature.

[0200] An "antigen binding protein" ("ABP") as used herein means any protein that binds a specified target antigen. In the instant application, the specified target antigen is the PCSK9 protein or fragment thereof. "Antigen binding protein" includes but is not limited to antibodies and binding parts thereof, such as immunologically functional fragments. Peptibodies are another example of antigen binding proteins. The term "immunologically functional fragment" (or simply "fragment") of an antibody or immunoglobulin chain (heavy or light chain) antigen binding protein, as used herein, is a species of antigen binding protein comprising a portion (regardless of how that portion is obtained or synthesized) of an antibody that lacks at least some of the amino acids present in a full-length chain but which is still capable of specifically binding to an antigen. Such fragments are biologically active in that they bind to the target antigen and can compete with other antigen binding proteins, including intact antibodies, for binding to a given epitope. In some embodiments, the fragments are neutralizing fragments. In some embodiments, the fragments can block or reduce the likelihood of the interaction between LDLR and PCSK9. In one aspect, such a fragment will retain at least one CDR present in the full-length light or heavy chain, and in some embodiments will comprise a single heavy chain and/or light chain or portion thereof. These biologically active fragments can be produced by recombinant DNA techniques, or can be produced by enzymatic or chemical cleavage of antigen binding proteins, including intact antibodies. Immunologically functional immunoglobulin fragments include, but are not limited to, Fab, a diabody (heavy chain variable

domain on the same polypeptide as a light chain variable domain, connected via a short peptide linker that is too short to permit pairing between the two domains on the same chain), Fab', $F(ab')_2$, Fv, domain antibodies and single-chain antibodies, and can be derived from any mammalian source, including but not limited to human, mouse, rat, camelid or rabbit. It is further contemplated that a functional portion of the antigen binding proteins disclosed herein, for example, one or more CDRs, could be covalently bound to a second protein or to a small molecule to create a therapeutic agent directed to a particular target in the body, possessing bifunctional therapeutic properties, or having a prolonged serum half-life. As will be appreciated by one of skill in the art, an antigen bindng protein can include nonprotein components. In some sections of the present disclosure, examples of ABPs are described herein in terms of "number/letter/number" (*e.g.*, 25A7). In these cases, the exact name denotes a specific antibody. That is, an ABP named 25A7 is not necessarily the same as an antibody named 25A7.1, (unless they are explicitly taught as the same in the specification, *e.g.*, 25A7 and 25A7.3). As will be appreciated by one of skill in the art, in some embodiments LDLR is not an antigen binding protein. In some embodiments, binding subsections of LDLR are not antigen binding proteins, *e.g.*, EGFa. In some embodiments, other molecules through which PCSK9 signals *in vivo* are not antigen binding proteins. Such embodiments will be explicitly identified as such.

[0201] Certain antigen binding proteins described herein are antibodies or are derived from antibodies. In certain embodiments, the polypeptide structure of the antigen binding proteins is based on antibodies, including, but not limited to, monoclonal antibodies, bispecific antibodies, minibodies, domain antibodies, synthetic antibodies (sometimes referred to herein as "antibody mimetics"), chimeric antibodies, humanized antibodies, human antibodies, antibody fusions (sometimes referred to herein as "antibody conjugates"), and fragments thereof, respectively. In some embodiments, the ABP comprises or consists of avimers (tightly binding peptide). These various antigen binding proteins are further described herein.

[0202] An "Fc" region comprises two heavy chain fragments comprising the C_H1 and C_H2 domains of an antibody. The two heavy chain fragments are held together by two or more disulfide bonds and by hydrophobic interactions of the C_H3 domains.

[0203] A "Fab fragment" comprises one light chain and the C_H1 and variable regions of one heavy chain. The heavy chain of a Fab molecule cannot form a disulfide bond with another heavy chain molecule.

[0204] A "Fab' fragment" comprises one light chain and a portion of one heavy chain that contains the VH domain and the C_H1 domain and also the region between the C_H1 and C_H2 domains, such that an interchain disulfide bond can be formed between the two heavy chains of two Fab' fragments to form an $F(ab')_2$ molecule.

[0205] A "$F(ab')_2$ fragment" contains two light chains and two heavy chains containing a portion of the constant region between the C_H1 and C_H2 domains, such that an interchain disulfide bond is formed between the two heavy chains. A $F(ab')_2$ fragment thus is composed of two Fab' fragments that are held together by a disulfide bond between the two heavy chains.

[0206] The "Fv region" comprises the variable regions from both the heavy and light chains, but lacks the constant regions.

[0207] "Single-chain antibodies" are Fv molecules in which the heavy and light chain variable regions have been connected by a flexible linker to form a single polypeptide chain, which forms an antigen binding region. Single chain antibodies are discussed in detail in International Patent Application Publication No. WO 88/01649 and United States Patent Nos. 4,946,778 and No. 5,260,203, the disclosures of which are incorporated by reference.

[0208] A "domain antibody" is an immunologically functional immunoglobulin fragment containing only the variable region of a heavy chain or the variable region of a light chain. In some instances, two or more V_H regions are covalently joined with a peptide linker to create a bivalent domain antibody. The two V_H regions of a bivalent domain antibody can target the same or different antigens.

[0209] A "bivalent antigen binding protein" or "bivalent antibody" comprises two antigen binding sites. In some instances, the two binding sites have the same antigen specificities. Bivalent antigen binding proteins and bivalent antibodies can be bispecific, *see, infra*. A bivalent antibody other than a "multispecific" or "multifunctional" antibody, in certain embodiments, typically is understood to have each of its binding sites identical.

[0210] A "multispecific antigen binding protein" or "multispecific antibody" is one that targets more than one antigen or epitope.

[0211] A "bispecific," "dual-specific" or "bifunctional" antigen binding protein or antibody is a hybrid antigen binding protein or antibody, respectively, having two different antigen binding sites. Bispecific antigen binding proteins and antibodies are a species of

multispecific antigen binding protein antibody and can be produced by a variety of methods including, but not limited to, fusion of hybridomas or linking of Fab' fragments. *See, e.g.*, Songsivilai and Lachmann, 1990, *Clin. Exp. Immunol.* 79:315-321; Kostelny *et al.*, 1992, *J. Immunol.* 148:1547-1553. The two binding sites of a bispecific antigen binding protein or antibody will bind to two different epitopes, which can reside on the same or different protein targets.

[0212] An antigen binding protein is said to "specifically bind" its target antigen when the dissociation constant (K_d) is $\leq 10^{-7}$ M. The ABP specifically binds antigen with "high affinity" when the K_d is $\leq 5 \times 10^{-9}$ M, and with "very high affinity" when the K_d is $\leq 5 \times 10^{-10}$ M. In one embodiment, the ABP has a K_d of $\leq 10^{-9}$ M. In one embodiment, the off-rate is $< 1 \times 10^{-5}$. In other embodiments, the ABPs will bind to human PCSK9 with a K_d of between about 10^{-9} M and 10^{-13} M, and in yet another embodiment the ABPs will bind with a $K_d \leq 5 \times 10^{-10}$. As will be appreciated by one of skill in the art, in some embodiments, any or all of the antigen binding fragments can specifically bind to PCSK9.

[0213] An antigen binding protein is "selective" when it binds to one target more tightly than it binds to a second target.

[0214] "Antigen binding region" means a protein, or a portion of a protein, that specifically binds a specified antigen (*e.g.*, a paratope). For example, that portion of an antigen binding protein that contains the amino acid residues that interact with an antigen and confer on the antigen binding protein its specificity and affinity for the antigen is referred to as "antigen binding region." An antigen binding region typically includes one or more "complementary binding regions" ("CDRs"). Certain antigen binding regions also include one or more "framework" regions. A "CDR" is an amino acid sequence that contributes to antigen binding specificity and affinity. "Framework" regions can aid in maintaining the proper conformation of the CDRs to promote binding between the antigen binding region and an antigen. Structurally, framework regions can be located in antibodies between CDRs. Examples of framework and CDR regions are shown in FIGs. 2A-3D, 3CCC-3JJJ, and 15A-15D. In some embodiments, the sequences for CDRs for the light chain of antibody 3B6 are as follows: CDR1 TLSSGYSSYEVD (SEQ ID NO: 279); CDR2 VDTGGIVGSKGE (SEQ ID NO: 280); CDR3 GADHGSGTNFVVV (SEQ ID NO: 281), and the FRs are as follows: FR1 QPVLTQPLFASASLGASVTLTC (SEQ ID NO: 282); FR2 WYQQRPGKGPRFVMR (SEQ

ID NO: 283); FR3 GIPDRFSVLGSGLNRYLTIKNIQEEDESDYHC (SEQ ID NO: 284); and FR4 FGGGTKLTVL (SEQ ID NO: 285).

[0215] In certain aspects, recombinant antigen binding proteins that bind PCSK9, for example human PCSK9, are provided. In this context, a "recombinant antigen binding protein" is a protein made using recombinant techniques, *i.e.*, through the expression of a recombinant nucleic acid as described herein. Methods and techniques for the production of recombinant proteins are well known in the art.

[0216] The term "antibody" refers to an intact immunoglobulin of any isotype, or a fragment thereof that can compete with the intact antibody for specific binding to the target antigen, and includes, for instance, chimeric, humanized, fully human, and bispecific antibodies. An "antibody" is a species of an antigen binding protein. An intact antibody will generally comprise at least two full-length heavy chains and two full-length light chains, but in some instances can include fewer chains such as antibodies naturally occurring in camelids which can comprise only heavy chains. Antibodies can be derived solely from a single source, or can be "chimeric," that is, different portions of the antibody can be derived from two different antibodies as described further below. The antigen binding proteins, antibodies, or binding fragments can be produced in hybridomas, by recombinant DNA techniques, or by enzymatic or chemical cleavage of intact antibodies. Unless otherwise indicated, the term "antibody" includes, in addition to antibodies comprising two full-length heavy chains and two full-length light chains, derivatives, variants, fragments, and muteins thereof, examples of which are described below. Furthermore, unless explicitly excluded, antibodies include monoclonal antibodies, bispecific antibodies, minibodies, domain antibodies, synthetic antibodies (sometimes referred to herein as "antibody mimetics"), chimeric antibodies, humanized antibodies, human antibodies, antibody fusions (sometimes referred to herein as "antibody conjugates"), and fragments thereof, respectively. In some embodiments, the term also encompasses peptibodies.

[0217] Naturally occurring antibody structural units typically comprise a tetramer. Each such tetramer typically is composed of two identical pairs of polypeptide chains, each pair having one full-length "light" (in certain embodiments, about 25 kDa) and one full-length "heavy" chain (in certain embodiments, about 50-70 kDa). The amino-terminal portion of each chain typically includes a variable region of about 100 to 110 or more amino acids that typically is responsible for antigen recognition. The carboxy-terminal portion of each chain typically

defines a constant region that can be responsible for effector function. Human light chains are typically classified as kappa and lambda light chains. Heavy chains are typically classified as mu, delta, gamma, alpha, or epsilon, and define the antibody's isotype as IgM, IgD, IgG, IgA, and IgE, respectively. IgG has several subclasses, including, but not limited to, IgG1, IgG2, IgG3, and IgG4. IgM has subclasses including, but not limited to, IgM1 and IgM2. IgA is similarly subdivided into subclasses including, but not limited to, IgA1 and IgA2. Within full-length light and heavy chains, typically, the variable and constant regions are joined by a "J" region of about 12 or more amino acids, with the heavy chain also including a "D" region of about 10 more amino acids. *See, e.g., Fundamental Immunology*, Ch. 7 (Paul, W., ed., 2nd ed. Raven Press, N.Y. (1989)) (incorporated by reference in its entirety for all purposes). The variable regions of each light/heavy chain pair typically form the antigen binding site.

[0218] The variable regions typically exhibit the same general structure of relatively conserved framework regions (FR) joined by three hyper variable regions, also called complementarity determining regions or CDRs. The CDRs from the two chains of each pair typically are aligned by the framework regions, which can enable binding to a specific epitope. From N-terminal to C-terminal, both light and heavy chain variable regions typically comprise the domains FR1, CDR1, FR2, CDR2, FR3, CDR3 and FR4. The assignment of amino acids to each domain is typically in accordance with the definitions of Kabat Sequences of Proteins of Immunological Interest (National Institutes of Health, Bethesda, Md. (1987 and 1991)), or Chothia & Lesk, J. Mol. Biol., 196:901-917 (1987); Chothia *et al.*, Nature, 342:878-883 (1989).

[0219] In certain embodiments, an antibody heavy chain binds to an antigen in the absence of an antibody light chain. In certain embodiments, an antibody light chain binds to an antigen in the absence of an antibody heavy chain. In certain embodiments, an antibody binding region binds to an antigen in the absence of an antibody light chain. In certain embodiments, an antibody binding region binds to an antigen in the absence of an antibody heavy chain. In certain embodiments, an individual variable region specifically binds to an antigen in the absence of other variable regions.

[0220] In certain embodiments, definitive delineation of a CDR and identification of residues comprising the binding site of an antibody is accomplished by solving the structure of the antibody and/or solving the structure of the antibody-ligand complex. In certain embodiments, that can be accomplished by any of a variety of techniques known to those skilled

in the art, such as X-ray crystallography. In certain embodiments, various methods of analysis can be employed to identify or approximate the CDR regions. Examples of such methods include, but are not limited to, the Kabat definition, the Chothia definition, the AbM definition and the contact definition.

[0221] The Kabat definition is a standard for numbering the residues in an antibody and is typically used to identify CDR regions. *See, e.g.*, Johnson & Wu, Nucleic Acids Res., 28: 214-8 (2000). The Chothia definition is similar to the Kabat definition, but the Chothia definition takes into account positions of certain structural loop regions. *See, e.g.*, Chothia *et al.*, J. Mol. Biol., 196: 901-17 (1986); Chothia *et al.*, Nature, 342: 877-83 (1989). The AbM definition uses an integrated suite of computer programs produced by Oxford Molecular Group that model antibody structure. *See, e.g.*, Martin *et al.*, Proc Natl Acad Sci (USA), 86:9268-9272 (1989); "AbM™, A Computer Program for Modeling Variable Regions of Antibodies," Oxford, UK; Oxford Molecular, Ltd. The AbM definition models the tertiary structure of an antibody from primary sequence using a combination of knowledge databases and *ab initio* methods, such as those described by Samudrala *et al.*, "*Ab Initio* Protein Structure Prediction Using a Combined Hierarchical Approach," in PROTEINS, Structure, Function and Genetics Suppl., 3:194-198 (1999). The contact definition is based on an analysis of the available complex crystal structures. *See, e.g.*, MacCallum *et al.*, J. Mol. Biol., 5:732-45 (1996).

[0222] By convention, the CDR regions in the heavy chain are typically referred to as H1, H2, and H3 and are numbered sequentially in the direction from the amino terminus to the carboxy terminus. The CDR regions in the light chain are typically referred to as L1, L2, and L3 and are numbered sequentially in the direction from the amino terminus to the carboxy terminus.

[0223] The term "light chain" includes a full-length light chain and fragments thereof having sufficient variable region sequence to confer binding specificity. A full-length light chain includes a variable region domain, V_L, and a constant region domain, C_L. The variable region domain of the light chain is at the amino-terminus of the polypeptide. Light chains include kappa chains and lambda chains.

[0224] The term "heavy chain" includes a full-length heavy chain and fragments thereof having sufficient variable region sequence to confer binding specificity. A full-length heavy chain includes a variable region domain, V_H, and three constant region domains, C_H1, C_H2, and C_H3. The V_H domain is at the amino-terminus of the polypeptide, and the C_H domains

are at the carboxyl-terminus, with the C_H3 being closest to the carboxy-terminus of the polypeptide. Heavy chains can be of any isotype, including IgG (including IgG1, IgG2, IgG3 and IgG4 subtypes), IgA (including IgA1 and IgA2 subtypes), IgM and IgE.

[0225] A bispecific or bifunctional antibody typically is an artificial hybrid antibody having two different heavy/light chain pairs and two different binding sites. Bispecific antibodies can be produced by a variety of methods including, but not limited to, fusion of hybridomas or linking of Fab' fragments. *See, e.g.,* Songsivilai *et al.*, Clin. Exp. Immunol., 79: 315-321 (1990); Kostelny *et al.*, J. Immunol., 148:1547-1553 (1992).

[0226] Some species of mammals also produce antibodies having only a single heavy chain.

[0227] Each individual immunoglobulin chain is typically composed of several "immunoglobulin domains," each consisting of roughly 90 to 110 amino acids and having a characteristic folding pattern. These domains are the basic units of which antibody polypeptides are composed. In humans, the IgA and IgD isotypes contain four heavy chains and four light chains; the IgG and IgE isotypes contain two heavy chains and two light chains; and the IgM isotype contains five heavy chains and five light chains. The heavy chain C region typically comprises one or more domains that can be responsible for effector function. The number of heavy chain constant region domains will depend on the isotype. IgG heavy chains, for example, contain three C region domains known as C_H1, C_H2 and C_H3. The antibodies that are provided can have any of these isotypes and subtypes. In certain embodiments of the present invention, an anti-PCSK9 antibody is of the IgG2 or IgG4 subtype.

[0228] The term "variable region" or "variable domain" refers to a portion of the light and/or heavy chains of an antibody, typically including approximately the amino-terminal 120 to 130 amino acids in the heavy chain and about 100 to 110 amino terminal amino acids in the light chain. In certain embodiments, variable regions of different antibodies differ extensively in amino acid sequence even among antibodies of the same species. The variable region of an antibody typically determines specificity of a particular antibody for its target

[0229] The term "neutralizing antigen binding protein" or "neutralizing antibody" refers to an antigen binding protein or antibody, respectively, that binds to a ligand and prevents or reduces the biological effect of that ligand. This can be done, for example, by directly blocking a binding site on the ligand or by binding to the ligand and altering the ligand's ability

to bind through indirect means (such as structural or energetic alterations in the ligand). In some embodiments, the term can also denote an antigen binding protein that prevents the protein to which it is bound from performing a biological function. In assessing the binding and/or specificity of an antigen binding protein, *e.g.*, an antibody or immunologically functional fragment thereof, an antibody or fragment can substantially inhibit binding of a ligand to its binding partner when an excess of antibody reduces the quantity of binding partner bound to the ligand by at least about 1-20, 20-30%, 30-40%, 40-50%, 50-60%, 60-70%, 70-80%, 80-85%, 85-90%, 90-95%, 95-97%, 97-98%, 98-99% or more (as measured in an *in vitro* competitive binding assay). In some embodiments, in the case of PCSK9 antigen binding proteins, such a neutralizing molecule can diminish the ability of PCSK9 to bind the LDLR. In some embodiments, the neutralizing ability is characterized and/or described via a competition assay. In some embodiments, the neutralizing ability is described in terms of an IC_{50} or EC_{50} value. In some embodiments, ABPs 27B2, 13H1, 13B5 and 3C4 are non-neutralizing ABPs, 3B6, 9C9 and 31A4 are weak neutralizers, and the remaining ABPs in Table 2 are strong neutralizers. In some embodiments, the antibodies or antigen binding proteins neutralize by binding to PCSK9 and preventing PCSK9 from binding to LDLR (or reducing the ability of PCSK9 to bind to LDLR). In some embodiments, the antibodies or ABPs neutralize by binding to PCSK9, and while still allowing PCSK9 to bind to LDLR, preventing or reducing the PCSK9 mediated degradation of LDLR. Thus, in some embodiments, a neutralizing ABP or antibody can still permit PCSK9/LDLR binding, but will prevent (or reduce) subsequent PCSK9 involved degradation of LDLR.

[0230] The term "target" refers to a molecule or a portion of a molecule capable of being bound by an antigen binding protein. In certain embodiments, a target can have one or more epitopes. In certain embodiments, a target is an antigen. The use of "antigen" in the phrase "antigen binding protein" simply denotes that the protein sequence that comprises the antigen can be bound by an antibody. In this context, it does not require that the protein be foreign or that it be capable of inducing an immune response.

[0231] The term "compete" when used in the context of antigen binding proteins (*e.g.*, neutralizing antigen binding proteins or neutralizing antibodies) that compete for the same epitope means competition between antigen binding proteins as determined by an assay in which the antigen binding protein (*e.g.*, antibody or immunologically functional fragment thereof)

being tested prevents or inhibits (*e.g.*, reduces) specific binding of a reference antigen binding protein (*e.g.*, a ligand, or a reference antibody) to a common antigen (*e.g.*, PCSK9 or a fragment thereof). Numerous types of competitive binding assays can be used to determine if one antigen binding protein competes with another, for example: solid phase direct or indirect radioimmunoassay (RIA), solid phase direct or indirect enzyme immunoassay (EIA), sandwich competition assay (*see, e.g.*, Stahli *et al.*, 1983, *Methods in Enzymology* 9:242-253); solid phase direct biotin-avidin EIA (*see, e.g.*, Kirkland *et al.*, 1986, *J. Immunol.* 137:3614-3619) solid phase direct labeled assay, solid phase direct labeled sandwich assay (*see, e.g.*, Harlow and Lane, 1988, *Antibodies, A Laboratory Manual*, Cold Spring Harbor Press); solid phase direct label RIA using I-125 label (*see, e.g.*, Morel *et al.*, 1988, *Molec. Immunol.* 25:7-15); solid phase direct biotin-avidin EIA (*see, e.g.*, Cheung, *et al.*, 1990, *Virology* 176:546-552); and direct labeled RIA (Moldenhauer *et al.*, 1990, *Scand. J. Immunol.* 32:77-82). Typically, such an assay involves the use of purified antigen bound to a solid surface or cells bearing either of these, an unlabelled test antigen binding protein and a labeled reference antigen binding protein. Competitive inhibition is measured by determining the amount of label bound to the solid surface or cells in the presence of the test antigen binding protein. Usually the test antigen binding protein is present in excess. Antigen binding proteins identified by competition assay (competing antigen binding proteins) include antigen binding proteins binding to the same epitope as the reference antigen binding proteins and antigen binding proteins binding to an adjacent epitope sufficiently proximal to the epitope bound by the reference antigen binding protein for steric hindrance to occur. Additional details regarding methods for determining competitive binding are provided in the examples herein. Usually, when a competing antigen binding protein is present in excess, it will inhibit (*e.g.*, reduce) specific binding of a reference antigen binding protein to a common antigen by at least 40-45%, 45-50%, 50-55%, 55-60%, 60-65%, 65-70%, 70-75% or 75% or more. In some instances, binding is inhibited by at least 80-85%, 85-90%, 90-95%, 95-97%, or 97% or more.

[0232] The term "antigen" refers to a molecule or a portion of a molecule capable of being bound by a selective binding agent, such as an antigen binding protein (including, *e.g.*, an antibody or immunological functional fragment thereof). In some embodiments, the antigen is capable of being used in an animal to produce antibodies capable of binding to that antigen. An

antigen can possess one or more epitopes that are capable of interacting with different antigen binding proteins, *e.g.*, antibodies.

[0233] The term "epitope" includes any determinant capable being bound by an antigen binding protein, such as an antibody or to a T-cell receptor. An epitope is a region of an antigen that is bound by an antigen binding protein that targets that antigen, and when the antigen is a protein, includes specific amino acids that directly contact the antigen binding protein. Most often, epitopes reside on proteins, but in some instances can reside on other kinds of molecules, such as nucleic acids. Epitope determinants can include chemically active surface groupings of molecules such as amino acids, sugar side chains, phosphoryl or sulfonyl groups, and can have specific three dimensional structural characteristics, and/or specific charge characteristics. Generally, antibodies specific for a particular target antigen will preferentially recognize an epitope on the target antigen in a complex mixture of proteins and/or macromolecules.

[0234] As used herein, "substantially pure" means that the described species of molecule is the predominant species present, that is, on a molar basis it is more abundant than any other individual species in the same mixture. In certain embodiments, a substantially pure molecule is a composition wherein the object species comprises at least 50% (on a molar basis) of all macromolecular species present. In other embodiments, a substantially pure composition will comprise at least 80%, 85%, 90%, 95%, or 99% of all macromolecular species present in the composition. In other embodiments, the object species is purified to essential homogeneity wherein contaminating species cannot be detected in the composition by conventional detection methods and thus the composition consists of a single detectable macromolecular species.

[0235] The term "agent" is used herein to denote a chemical compound, a mixture of chemical compounds, a biological macromolecule, or an extract made from biological materials.

[0236] As used herein, the terms "label" or "labeled" refers to incorporation of a detectable marker, e.g., by incorporation of a radiolabeled amino acid or attachment to a polypeptide of biotin moieties that can be detected by marked avidin (e.g., streptavidin containing a fluorescent marker or enzymatic activity that can be detected by optical or colorimetric methods). In certain embodiments, the label or marker can also be therapeutic. Various methods of labeling polypeptides and glycoproteins are known in the art and can be used. Examples of labels for polypeptides include, but are not limited to, the following:

radioisotopes or radionuclides (e.g., ^{3}H, ^{14}C, ^{15}N, ^{35}S, ^{90}Y, ^{99}Tc, ^{111}In, ^{125}I, ^{131}I), fluorescent labels (e.g., FITC, rhodamine, lanthanide phosphors), enzymatic labels (e.g., horseradish peroxidase, β-galactosidase, luciferase, alkaline phosphatase), chemiluminescent, biotinyl groups, predetermined polypeptide epitopes recognized by a secondary reporter (e.g., leucine zipper pair sequences, binding sites for secondary antibodies, metal binding domains, epitope tags). In certain embodiments, labels are attached by spacer arms of various lengths to reduce potential steric hindrance.

[0237] The term "biological sample", as used herein, includes, but is not limited to, any quantity of a substance from a living thing or formerly living thing. Such living things include, but are not limited to, humans, mice, monkeys, rats, rabbits, and other animals. Such substances include, but are not limited to, blood, serum, urine, cells, organs, tissues, bone, bone marrow, lymph nodes, and skin.

[0238] The term "pharmaceutical agent composition" (or agent or drug) as used herein refers to a chemical compound, composition, agent or drug capable of inducing a desired therapeutic effect when properly administered to a patient. It does not necessarily require more than one type of ingredient.

[0239] The term "therapeutically effective amount" refers to the amount of a PCSK9 antigen binding protein determined to produce a therapeutic response in a mammal. Such therapeutically effective amounts are readily ascertained by one of ordinary skill in the art.

[0240] The term "modulator," as used herein, is a compound that changes or alters the activity or function of a molecule. For example, a modulator can cause an increase or decrease in the magnitude of a certain activity or function of a molecule compared to the magnitude of the activity or function observed in the absence of the modulator. In certain embodiments, a modulator is an inhibitor, which decreases the magnitude of at least one activity or function of a molecule. Certain exemplary activities and functions of a molecule include, but are not limited to, binding affinity, enzymatic activity, and signal transduction. Certain exemplary inhibitors include, but are not limited to, proteins, peptides, antibodies, peptibodies, carbohydrates or small organic molecules. Peptibodies are described in, e.g., U.S. Patent No. 6,660,843 (corresponding to PCT Application No. WO 01/83525).

[0241] The terms "patient" and "subject" are used interchangeably and include human and non-human animal subjects as well as those with formally diagnosed disorders, those

without formally recognized disorders, those receiving medical attention, those at risk of developing the disorders, etc.

[0242] The term "treat" and "treatment" includes therapeutic treatments, prophylactic treatments, and applications in which one reduces the risk that a subject will develop a disorder or other risk factor. Treatment does not require the complete curing of a disorder and encompasses embodiments in which one reduces symptoms or underlying risk factors.

[0243] The term "prevent" does not require the 100% elimination of the possibility of an event. Rather, it denotes that the likelihood of the occurrence of the event has been reduced in the presence of the compound or method.

[0244] Standard techniques can be used for recombinant DNA, oligonucleotide synthesis, and tissue culture and transformation (e.g., electroporation, lipofection). Enzymatic reactions and purification techniques can be performed according to manufacturer's specifications or as commonly accomplished in the art or as described herein. The foregoing techniques and procedures can be generally performed according to conventional methods well known in the art and as described in various general and more specific references that are cited and discussed throughout the present specification. *See, e.g.*, Sambrook *et al.*, *Molecular Cloning: A Laboratory Manual* (2d ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y. (1989)), which is incorporated herein by reference for any purpose. Unless specific definitions are provided, the nomenclatures utilized in connection with, and the laboratory procedures and techniques of, analytical chemistry, synthetic organic chemistry, and medicinal and pharmaceutical chemistry described herein are those well known and commonly used in the art. Standard techniques can be used for chemical syntheses, chemical analyses, pharmaceutical preparation, formulation, and delivery, and treatment of patients.

Antigen Binding Proteins to PCSK9

[0245] Proprotein convertase subtilisin kexin type 9 (PCSK9) is a serine protease involved in regulating the levels of the low density lipoprotein receptor (LDLR) protein (Horton *et al.*, 2007; Seidah and Prat, 2007). PCSK9 is a prohormone-proprotein convertase in the subtilisin (S8) family of serine proteases (Seidah *et al.*, 2003). An exemplary human PCSK9 amino acid sequence is presented as SEQ ID NOs: 1 and 3. in FIG. 1A (depicting the "pro" domain of the protein as underlined) and FIG. 1B (depicting the signal sequence in bold and the

pro domain underlined). An exemplary human PCSK9 coding sequence is presented as SEQ ID NO: 2 (FIG. 1B). As described herein, PCSK9 proteins can also include fragments of the full length PCSK9 protein. The structure of the PCSK9 protein has recently been solved by two groups (Cunningham et al., Nature Structural & Molecular Biology, 2007, and Piper et al., Structure, 15:1-8, 2007), the entireties of both of which are herein incorporated by reference. PCSK9 includes a signal sequence, a N-terminal prodomain, a subtilisin-like catalytic domain and a C-terminal domain.

[0246] Antigen binding proteins (ABPs) that bind PCSK9, including human PCSK9, are provided herein. In some embodiments, the antigen binding proteins provided are polypeptides which comprise one or more complementary determining regions (CDRs), as described herein. In some antigen binding proteins, the CDRs are embedded into a "framework" region, which orients the CDR(s) such that the proper antigen binding properties of the CDR(s) is achieved. In some embodiments, antigen binding proteins provided herein can interfere with, block, reduce or modulate the interaction between PCSK9 and LDLR. Such antigen binding proteins are denoted as "neutralizing." In some embodiments, binding between PCSK9 and LDLR can still occur, even though the antigen binding protein is neutralizing and bound to PCSK9. For example, in some embodiments, the ABP prevents or reduces the adverse influence of PCSK9 on LDLR without blocking the LDLR binding site on PCSK9. Thus, in some embodiments, the ABP modulates or alters PCSK9's ability to result in the degradation of LDLR, without having to prevent the binding interaction between PCSK9 and LDLR. Such ABPs can be specifically described as "non-competitively neutralizing" ABPs. In some embodiments, the neutralizing ABP binds to PCSK9 in a location and/or manner that prevents PCSK9 from binding to LDLR. Such ABPs can be specifically described as "competitively neutralizing" ABPs. Both of the above neutralizers can result in a greater amount of free LDLR being present in a subject, which results in more LDLR binding to LDL (thereby reducing the amount of LDL in the subject). In turn, this results in a reduction in the amount of serum cholesterol present in a subject.

[0247] In some embodiments, the antigen binding proteins provided herein are capable of inhibiting PCSK9-mediated activity (including binding). In some embodiments, antigen binding proteins binding to these epitopes inhibit, *inter alia,* interactions between PCSK9

and LDLR and other physiological effects mediated by PCSK9. In some embodiments, the antigen binding proteins are human, such as fully human antibodies to PCSK9.

[0248] In some embodiments, the ABP binds to the catalytic domain of PCSK9. In some embodiments, the ABP binds to the mature form of PCSK9. In some embodiments the ABP binds in the prodomain of PCSK9. In some embodiments, the ABP selectively binds to the mature form of PCSK9. In some embodiments, the ABP binds to the catalytic domain in a manner such that PCSK9 cannot bind or bind as efficiently to LDLR. In some embodiments, the antigen binding protein does not bind to the c-terminus of the cataylytic domain. In some embodiments, the antigen binding protein does not bind to the n-terminus of the catalytic domain. In some embodiments, the ABP does not bind to the n- or c-terminus of the PCSK9 protein. In some embodiments, the ABP binds to any one of the epitopes bound by the antibodies discussed herein. In some embodiments, this can be determined by competition assays between the antibodies disclosed herein and other antibodes. In some embodiments, the ABP binds to an epitope bound by one of the antibodies described in Table 2. In some embodiments, the antigen binding proteins bind to a specific conformational state of PCSK9 so as to prevent PCSK9 from interacting with LDLR. In some embodiments, the ABP binds to the V domain of PCSK9. In some embodiments, the ABP binds to the V domain of PCSK9 and prevents (or reduces) PCSK9 from binding to LDLR. In some embodiments, the ABP binds to the V domain of PCSK9, and while it does not prevent (or reduce) the binding of PCSK9 to LDLR, the ABP prevents or reduces the adverse activities mediated through PCSK9 on LDLR.

[0249] The antigen binding proteins that are disclosed herein have a variety of utilities. Some of the antigen binding proteins, for instance, are useful in specific binding assays, affinity purification of PCSK9, in particular human PCSK9 or its ligands and in screening assays to identify other antagonists of PCSK9 activity. Some of the antigen binding proteins are useful for inhibiting binding of PCSK9 to LDLR, or inhibiting PCSK9-mediated activities.

[0250] The antigen binding proteins can be used in a variety of therapeutic applications, as explained herein. For example, in some embodiments the PCSK9 antigen binding proteins are useful for treating conditions associated with PCSK9, such as cholesterol related disorders (or "serum cholesterol related disorders") such as hypercholesterolemia, as further described herein. Other uses for the antigen binding proteins include, for example, diagnosis of PCSK9-associated diseases or conditions and screening assays to determine the

presence or absence of PCSK9. Some of the antigen binding proteins described herein are useful in treating consequences, symptoms, and/or the pathology associated with PCSK9 activity.

[0251] In some embodiments, the antigen binding proteins that are provided comprise one or more CDRs (*e.g.*, 1, 2, 3, 4, 5 or 6 CDRs). In some embodiments, the antigen binding protein comprises (a) a polypeptide structure and (b) one or more CDRs that are inserted into and/or joined to the polypeptide structure. The polypeptide structure can take a variety of different forms. For example, it can be, or comprise, the framework of a naturally occurring antibody, or fragment or variant thereof, or can be completely synthetic in nature. Examples of various polypeptide structures are further described below.

[0252] In certain embodiments, the polypeptide structure of the antigen binding proteins is an antibody or is derived from an antibody, including, but not limited to, monoclonal antibodies, bispecific antibodies, minibodies, domain antibodies, synthetic antibodies (sometimes referred to herein as "antibody mimetics"), chimeric antibodies, humanized antibodies, antibody fusions (sometimes referred to as "antibody conjugates"), and portions or fragments of each, respectively. In some instances, the antigen binding protein is an immunological fragment of an antibody (*e.g.*, a Fab, a Fab', a $F(ab')_2$, or a scFv). The various structures are further described and defined herein.

[0253] Certain of the antigen binding proteins as provided herein specifically and/or selectively bind to human PCSK9. In some embodiments, the antigen binding protein specifically and/or selectively binds to human PCSK9 protein having and/or consisting of residues 153-692 of SEQ ID NO: 3. In some embodiments the ABP specifically and/or selectively binds to human PCSK9 having and/or consiting of residues 31-152 of SEQ ID NO: 3. In some embodiments, the ABP selectively binds to a human PCSK9 protein as depicted in FIG. 1A (SEQ ID NO: 1). In some embodiments, the antigen binding protein specifically binds to at least a fragment of the PCSK9 protein and/or a full length PCSK9 protein, with or without a signal sequence.

[0254] In embodiments where the antigen binding protein is used for therapeutic applications, an antigen binding protein can inhibit, interfere with or modulate one or more biological activities of PCSK9. In one embodiment, an antigen binding protein binds specifically to human PCSK9 and/or substantially inhibits binding of human PCSK9 to LDLR by at least about 20%-40%, 40-60%, 60-80%, 80-85%, or more (for example, by measuring binding

in an *in vitro* competitive binding assay). Some of the antigen binding proteins that are provided herein are antibodies. In some embodiments, the ABP has a K_d of less (binding more tightly) than 10^{-7}, 10^{-8}, 10^{-9}, 10^{-10}, 10^{-11}, 10^{-12}, 10^{-13} M. In some embodiments, the ABP has an IC_{50} for blocking the binding of LDLR to PCSK9 (D374Y, high affinity variant) of less than 1 microM, 1000 nM to 100 nM, 100nM to 10 nM, 10nM to 1 nM, 1000pM to 500pM, 500 pM to 200 pM, less than 200 pM, 200 pM to 150 pM, 200 pM to 100 pM, 100 pM to 10 pM, 10 pM to 1 pM.

[0255] One example of an IgG2 heavy chain constant domain of an anti-PCSK9 antibody of the present invention has the amino acid sequence as shown in SEQ ID NO: 154, FIG. 3KK.

[0256] One example of an IgG4 heavy chain constant domain of an anti-PCSK9 antibody of the present invention has the amino acid sequence as shown in SEQ ID NO: 155, FIG. 3KK.

[0257] One example of a kappa light chain constant domain of an anti-PCSK9 antibody has the amino acid sequence as shown in SEQ ID NO: 157, FIG. 3KK.

[0258] One example of a lambda light chain constant domain of an anti-PCSK9 antibody has the amino acid sequence as shown in SEQ ID NO: 156, FIG. 3KK.

[0259] Variable regions of immunoglobulin chains generally exhibit the same overall structure, comprising relatively conserved framework regions (FR) joined by three hypervariable regions, more often called "complementarity determining regions" or CDRs. The CDRs from the two chains of each heavy chain/light chain pair mentioned above typically are aligned by the framework regions to form a structure that binds specifically with a specific epitope on the target protein (*e.g.*, PCSK9). From N-terminal to C-terminal, naturally-occurring light and heavy chain variable regions both typically conform with the following order of these elements: FR1, CDR1, FR2, CDR2, FR3, CDR3 and FR4. A numbering system has been devised for assigning numbers to amino acids that occupy positions in each of these domains. This numbering system is defined in Kabat Sequences of Proteins of Immunological Interest (1987 and 1991, NIH, Bethesda, MD), or Chothia & Lesk, 1987, *J. Mol. Biol.* 196:901-917; Chothia *et al.*, 1989, *Nature* 342:878-883.

[0260] Various heavy chain and light chain variable regions are provided herein and are depicted in FIGs. 2A-3JJ and 3LL-3BBB. In some embodiments, each of these variable regions can be attached to the above heavy and light chain constant regions to form a complete

antibody heavy and light chain, respectively. Further, each of the so generated heavy and light chain sequences can be combined to form a complete antibody structure.

[0261] Specific examples of some of the variable regions of the light and heavy chains of the antibodies that are provided and their corresponding amino acid sequences are summarized in TABLE 2.

TABLE 2

Exemplary Heavy and Light Chain Variable Regions

Antibody	Light/Heavy SEQ ID NO
30A4	5/74
3C4	7/85
23B5	9/71
25G4	10/72
31H4	12/67
27B2	13/87
25A7	15/58
27H5	16/52
26H5	17/51
31D1	18/53
20D10	19/48
27E7	20/54
30B9	21/55
19H9	22/56
26E10	23/49
21B12	23/49
17C2	24/57
23G1	26/50
13H1	28/91
9C9	30/64
9H6	31/62
31A4	32/89
1A12	33/65
16F12	35/79
22E2	36/80
27A6	37/76
28B12	38/77
28D6	39/78
31G11	40/83
13B5	42/69
31B12	44/81
3B6	46/60

[0262] Again, each of the exemplary variable heavy chains listed in Table 2 can be combined with any of the exemplary variable light chains shown in Table 2 to form an antibody. Table 2 shows exemplary light and heavy chain pairings found in several of the antibodies

disclosed herein. In some instances, the antibodies include at least one variable heavy chain and one variable light chain from those listed in Table 2. In other instances, the antibodies contain two identical light chains and two identical heavy chains. As an example, an antibody or antigen binding protein can include a heavy chain and a light chain, two heavy chains, or two light chains. In some embodiments the antigen binding protein comprises (and/or consists) of 1, 2, and/or 3 heavy and/or light CDRs from at least one of the sequences listed in Table 2 (CDRs for the sequences are outlined in FIGs. 2A-3D, and other embodiments in FIGs. 3CCC-3JJJ and 15A-15D). In some embodiments, all 6 CDRs (CDR1-3 from the light (CDRL1, CDRL2, CDRL3) and CDR1-3 from the heavy (CDRH1, CDRH2, and CDRH3)) are part of the ABP. In some embodiments, 1, 2, 3, 4, 5, or more CDRs are included in the ABP. In some embodiments, one heavy and one light CDR from the CDRs in the sequences in Table 2 is included in the ABP (CDRs for the sequences in table 2 are outlined in FIGs. 2A-3D). In some embodiments, additional sections (e.g., as depicted in FIG. 2A-2D, 3A-3D, and other embodiments in 3CCC-3JJJ and 15A-15D) are also included in the ABP. Examples of CDRs and FRs for the heavy and light chains noted in Table 2 are outlined in FIGs. 2A-3D (and other embodiments in FIGs. 3CCC-3JJJ and 15A-15D). Optional light chain variable sequences (including CDR1, CDR2, CDR3, FR1, FR2, FR3, and FR4) can be selected from the following: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46. Optional heavy chain variable sequences (including CDR1, CDR2, CDR3, FR1, FR2, FR3, and FR4) can be selected from the following: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60. In some of the entries in FIG. 2A-3D, variations of the sequences or alternative boundaries of the CDRs and FRs are identified. These alternatives are identified with a "v1" following the ABP name. As most of these alternatives are minor in nature, only sections with differences are displayed in the table. It is understood that the remaining section of the light or heavy chain is the same as shown for the base ABP in the other panels. Thus, for example, 19H9v1 in FIG. 2C has the same FR1, CDR1, and FR2 as 19H9 in FIG. 2A as the only difference is noted in FIG. 2C. For three of the nucleic acid sequences (ABPs 26E10, 30B9, and 31B12), additional alternative nucleic acid sequences are provided in the figures. As will be appreciated by one of skill in the art, no more than one such sequence need actually be used in the creation of an antibody or ABP. Indeed, in some

embodiments, only one or neither of the specific heavy or light chain nucleic acids need be present.

[0263] In some embodiments, the ABP is encoded by a nucleic acid sequence that can encode any of the protein sequences in Table 2.

[0264] In some embodiments, the ABP binds selectively to the form of PCSK9 that binds to LDLR (*e.g.*, the autocatalyzed form of the molecule). In some embodiments, the antigen binding protein does not bind to the c-terminus of the catalytic domain (*e.g.*, the 5, 5-10, 10-15, 15-20, 20-25, 25-30, 30-40 most amino acids in the c-terminus). In some embodiments, the antigen binding protein does not bind to the n-terminus of the catalytic domain (*e.g.*, the 5, 5-10, 10-15, 15-20, 20-25, 25-30, 30-40 most amino acids in the n-terminus). In some embodiments, the ABP binds to amino acids within amino acids 1-100 of the mature form of PCSK9. In some embodiments, the ABP binds to amino acids within (and/or amino acid sequences consisting of) amino acids 31-100, 100-200, 31-152, 153-692, 200-300, 300-400, 452-683, 400-500, 500-600, 31-692, 31-449, and/or 600-692. In some embodiments, the ABP binds to the catalytic domain. In some embodiments, the neutralizing and/or non-neutralizing ABP binds to the prodomain. In some embodiments, the ABP binds to both the catalytic and pro domains. In some embodiments, the ABP binds to the catalytic domain so as to obstruct an area on the catalytic domain that interacts with the pro domain. In some embodiments, the ABP binds to the catalytic domain at a location or surface that the pro-domain interacts with as outlined in Piper et al. (Structure 15:1-8 (2007), the entirety of which is hereby incorporated by reference, including the structural representations therein). In some embodiments, the ABP binds to the catalytic domain and restricts the mobility of the prodomain. In some embodiments, the ABP binds to the catalytic domain without binding to the pro-domain. In some embodiments, the ABP binds to the catalytic domain, without binding to the pro-domain, while preventing the pro-domain from reorienting to allow PCSK9 to bind to LDLR. In some embodiments, the ABP binds in the same epitope as those surrounding residues 149-152 of the pro-domain in Piper et al. In some embodiments, the ABPs bind to the groove (as outlined in Piper et al.) on the V domain. In some embodiments, the ABPs bind to the histidine-rich patch proximal to the groove on the V domain. In some embodiments, such antibodies (that bind to the V domain) are not neutralizing. In some embodiments, antibodies that bind to the V domain are neutralizing. In some embodiments, the neutralizing ABPs prevent the binding of PCSK9 to LDLR. In some

embodiments, the neturalizing ABPs, while preventing the PCSK9 degradation of LDLR, do not prevent the binding of PCSK9 to LDLR (for example ABP 31A4). In some embodiments, the ABP binds to or blocks at least one of the histidines depicted in Figure 4 of the Piper et al. paper. In some embodiments, the ABP blocks the catalytic triad in PCSK9.

[0265] In some embodiments, the antibody binds selectively to variant PCSK9 proteins, *e.g.*, D374Y over wild type PCSK9. In some embodiments, these antibodies bind to the variant at least twice as strongly as the wild type, and preferably 2-5, 5-10, 10-100, 100-1000, 1000-10,000 fold or more to the mutant than the wild type (as measured via a K_d). In some embodiments, the antibody selectively inhibits variant D374Y PCSK9 from interacting with LDLR over wild type PCSK9's ability to interact with LDLR. In some embodiments, these antibodies block the variant's ability to bind to LDLR more strongly than the wild type's ability, e.g., at least twice as strongly as the wild type, and preferably 2-5, 5-10, 10-100, 100-1000 fold or more to the mutant than the wild type (as measured via an IC_{50}). In some embodiments, the antibody binds to and neutralizes both wild type PCSK9 and variant forms of PCSK9, such as D374Y at similar levels. In some embodiments, the antibody binds to PCSK9 to prevent variants of LDLR from binding to PCSK9. In some embodiments, the variants of LDLR are at least 50% identical to human LDLR. It is noted that variants of LDLR are known to those of skill in the art (*e.g.*, Brown MS et al, "Calcium cages, acid baths and recycling receptors" Nature 388: 629-630, 1997). In some embodiments, the ABP can raise the level of effective LDLR in heterozygote familial hypercholesterolemia (where a loss-of function variant of LDLR is present).

[0266] In some embodiments, the ABP binds to (but does not block) variants of PCSK9 that are at least 50%, 50-60, 60-70, 70-80, 80-90, 90-95, 95-99, or greater percent identity to the form of PCSK9 depicted in FIG. 1A and/or FIG. 1B. In some embodiments, the ABP binds to (but does not block) variants of PCSK9 that are at least 50%, 50-60, 60-70, 70-80, 80-90, 90-95, 95-99, or greater percent identity to the mature form of PCSK9 depicted in FIG. 1A and/or FIG. 1B. In some embodiments, the ABP binds to and prevents variants of PCSK9 that are at least 50%, 50-60, 60-70, 70-80, 80-90, 90-95, 95-99, or greater percent identity to the form of PCSK9 depicted in FIG. 1A and/or FIG. 1B from interacting with LDLR. In some embodiments, the ABP binds to and prevents variants of PCSK9 that are at least 50, 50-60, 60-70, 70-80, 80-90, 90-95, 95-99, or greater percent identity to the mature form of PCSK9 depicted in FIG. 1B from interacting with LDLR. In some embodiments, the variant of PCSK9 is a

human variant, such as variants at position 474, E620G, and/or E670G. In some embodiments, the amino acid at position 474 is valine (as in other humans) or threonine (as in cyno and mouse). Given the cross-reactivity data presented herein, it is believed that the present antibodies will readily bind to the above variants.

[0267] In some embodiments, the ABP binds to an epitope bound by one of the antibodies described in Table 2. In some embodiments, the antigen binding proteins bind to a specific conformational state of PCSK9 so as to prevent PCSK9 from interacting with LDLR.

Humanized Antigen Binding Proteins (*e.g.*, Antibodies)

[0268] As described herein, an antigen binding protein to PCSK9 can comprise a humanized antibody and/or part thereof. An important practical application of such a strategy is the "humanization" of the mouse humoral immune system.

[0269] In certain embodiments, a humanized antibody is substantially non-immunogenic in humans. In certain embodiments, a humanized antibody has substantially the same affinity for a target as an antibody from another species from which the humanized antibody is derived. *See, e.g.*, U.S. Patent 5,530,101, U.S. Patent 5,693,761; U.S. Patent 5,693,762; U.S. Patent 5,585,089.

[0270] In certain embodiments, amino acids of an antibody variable domain that can be modified without diminishing the native affinity of the antigen binding domain while reducing its immunogenicity are identified. *See, e.g.*, U.S. Patent Nos. 5,766,886 and 5,869,619.

[0271] In certain embodiments, modification of an antibody by methods known in the art is typically designed to achieve increased binding affinity for a target and/or to reduce immunogenicity of the antibody in the recipient. In certain embodiments, humanized antibodies are modified to eliminate glycosylation sites in order to increase affinity of the antibody for its cognate antigen. *See, e.g.*, Co *et al.*, Mol. Immunol., 30:1361-1367 (1993). In certain embodiments, techniques such as "reshaping," "hyperchimerization," or "veneering/resurfacing" are used to produce humanized antibodies. *See, e.g.*, Vaswami *et al.*, Annals of Allergy, Asthma, & Immunol. 81:105 (1998); Roguska *et al.*, Prot. Engineer., 9:895-904 (1996); and U.S. Patent No. 6,072,035. In certain such embodiments, such techniques typically reduce antibody immunogenicity by reducing the number of foreign residues, but do not prevent anti-idiotypic and anti-allotypic responses following repeated administration of the antibodies. Certain other

methods for reducing immunogenicity are described, e.g., in Gilliland *et al.*, J. Immunol ., 62(6): 3663-71 (1999).

[0272] In certain instances, humanizing antibodies results in a loss of antigen binding capacity. In certain embodiments, humanized antibodies are "back mutated." In certain such embodiments, the humanized antibody is mutated to include one or more of the amino acid residues found in the donor antibody. *See, e.g.,* Saldanha *et al.*, *Mol Immunol* 36:709-19 (1999).

[0273] In certain embodiments the complementarity determining regions (CDRs) of the light and heavy chain variable regions of an antibody to PCSK9 can be grafted to framework regions (FRs) from the same, or another, species. In certain embodiments, the CDRs of the light and heavy chain variable regions of an antibody to PCSK9 can be grafted to consensus human FRs. To create consensus human FRs, in certain embodiments, FRs from several human heavy chain or light chain amino acid sequences are aligned to identify a consensus amino acid sequence. In certain embodiments, the FRs of an antibody to PCSK9 heavy chain or light chain are replaced with the FRs from a different heavy chain or light chain. In certain embodiments, rare amino acids in the FRs of the heavy and light chains of an antibody to PCSK9 are not replaced, while the rest of the FR amino acids are replaced. Rare amino acids are specific amino acids that are in positions in which they are not usually found in FRs. In certain embodiments, the grafted variable regions from an antibody to PCSK9 can be used with a constant region that is different from the constant region of an antibody to PCSK9. In certain embodiments, the grafted variable regions are part of a single chain Fv antibody. CDR grafting is described, e.g., in U.S. Patent Nos. 6,180,370, 6,054,297, 5,693,762, 5,859,205, 5,693,761, 5,565,332, 5,585,089, and 5,530,101, and in Jones *et al.*, Nature, 321: 522-525 (1986); Riechmann *et al.*, Nature, 332: 323-327 (1988); Verhoeyen *et al.*, Science, 239:1534-1536 (1988), Winter, FEBS Letts., 430:92-94 (1998), which are hereby incorporated by reference for any purpose.

Human Antigen Binding Proteins (*e.g.*, Antibodies)

[0274] As described herein, an antigen binding protein that binds to PCSK9 can comprise a human (*i.e.*, fully human) antibody and/or part thereof. In certain embodiments, nucleotide sequences encoding, and amino acid sequences comprising, heavy and light chain immunoglobulin molecules, particularly sequences corresponding to the variable regions are provided. In certain embodiments, sequences corresponding to complementarity determining

regions (CDR's), specifically from CDR1 through CDR3, are provided. According to certain embodiments, a hybridoma cell line expressing such an immunoglobulin molecule is provided. According to certain embodiments, a hybridoma cell line expressing such a monoclonal antibody is provided. In certain embodiments a hybridoma cell line is selected from at least one of the cell lines described in Table 2, *e.g.*, 21B12, 16F12 and 31H4. In certain embodiments, a purified human monoclonal antibody to human PCSK9 is provided.

[0275] One can engineer mouse strains deficient in mouse antibody production with large fragments of the human Ig loci in anticipation that such mice would produce human antibodies in the absence of mouse antibodies. Large human Ig fragments can preserve the large variable gene diversity as well as the proper regulation of antibody production and expression. By exploiting the mouse machinery for antibody diversification and selection and the lack of immunological tolerance to human proteins, the reproduced human antibody repertoire in these mouse strains can yield high affinity fully human antibodies against any antigen of interest, including human antigens. Using the hybridoma technology, antigen-specific human MAbs with the desired specificity can be produced and selected. Certain exemplary methods are described in WO 98/24893, U.S. Patent No. 5,545,807, EP 546073, and EP 546073.

[0276] In certain embodiments, one can use constant regions from species other than human along with the human variable region(s).

[0277] The ability to clone and reconstruct megabase sized human loci in yeast artificial chromosomes (YACs) and to introduce them into the mouse germline provides an approach to elucidating the functional components of very large or crudely mapped loci as well as generating useful models of human disease. Furthermore, the utilization of such technology for substitution of mouse loci with their human equivalents could provide insights into the expression and regulation of human gene products during development, their communication with other systems, and their involvement in disease induction and progression.

[0278] Human antibodies avoid some of the problems associated with antibodies that possess murine or rat variable and/or constant regions. The presence of such murine or rat derived proteins can lead to the rapid clearance of the antibodies or can lead to the generation of an immune response against the antibody by a patient. In order to avoid the utilization of murine or rat derived antibodies, fully human antibodies can be generated through the introduction of

functional human antibody loci into a rodent, other mammal or animal so that the rodent, other mammal or animal produces fully human antibodies.

[0279] Humanized antibodies are those antibodies that, while initially starting off containing antibody amino acid sequences that are not human, have had at least some of these nonhuman antibody amino acid sequences replaced with human antibody sequences. This is in contrast with human antibodies, in which the antibody is encoded (or capable of being encoded) by genes possessed a human.

Antigen Binding Protein Variants

[0280] Other antibodies that are provided are variants of the ABPs listed above formed by combination or subparts of the variable heavy and variable light chains shown in Table 2 and comprise variable light and/or variable heavy chains that each have at least 50%, 50-60, 60-70, 70-80%, 80-85%, 85-90%, 90-95%, 95-97%, 97-99%, or above 99% identity to the amino acid sequences of the sequences in Table 2 (either the entire sequence or a subpart of the sequence, *e.g.*, one or more CDR). In some instances, such antibodies include at least one heavy chain and one light chain, whereas in other instances the variant forms contain two identical light chains and two identical heavy chains (or subparts thereof). In some embodiments, the sequence comparison in FIG. 2A-3D (and 13A-13J and other embodiments in 15A-15D) can be used in order to identify sections of the antibodies that can be modified by observing those variations that impact binding and those variations that do not appear to impact binding. For example, by comparing similar sequences, one can identify those sections (e.g., particular amino acids) that can be modified and how they can be modified while still retaining (or improving) the functionality of the ABP. In some embodiments, variants of ABPs include those consensus groups and sequences depicted in FIGs. 13A, 13C, 13F, 13G, 13H, 13I and/or 13J and variations are allowed in the positions identified as variable in the figures. The CDRs shown in FIGs. 13A, 13C, 13F, and 13G were defined based upon a hybrid combination of the Chothia method (based on the location of the structural loop regions, *see, e.g.*, "Standard conformations for the canonical structures of immunoglobulins," Bissan Al-Lazikani, Arthur M. Lesk and Cyrus Chothia, *Journal of Molecular Biology*, 273(4): 927-948, 7 November (1997)) and the Kabat method (based on sequence variability, *see, e.g., Sequences of Proteins of Immunological Interest*, Fifth

Edition. NIH Publication No. 91-3242, Kabat et al., (1991)). Each residue determined by either method, was included in the final list of CDR residues (and are presented in FIGs. 13A, 13C, 13F, and 13G). The CDRs in FIGs. 13H, 13I, and 13J were obtained by the Kabat method alone. Unless specified otherwise, the defined consensus sequences, CDRs, and FRs in FIGs. 13H-13J will define and control the noted CDRs and FRs for the referenced ABPs in FIG. 13.

[0281] In certain embodiments, an antigen binding protein comprises a heavy chain comprising a variable region comprising an amino acid sequence at least 90% identical to an amino acid sequence selected from at least one of the sequences of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60. In certain embodiments, an antigen binding protein comprises a heavy chain comprising a variable region comprising an amino acid sequence at least 95% identical to an amino acid sequence selected from at least one of the sequences of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60. In certain embodiments, an antigen binding protein comprises a heavy chain comprising a variable region comprising an amino acid sequence at least 99% identical to an amino acid sequence selected from at least one of the sequences of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60.

[0282] In some embodiments, the antigen binding protein comprises a sequence that is at least 90%, 90-95%, and/or 95-99% identical to one or more CDRs from the CDRs in at least one of sequences of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60. In some embodiments, 1, 2, 3, 4, 5, or 6 CDR (each being at least 90%, 90-95%, and/or 95-99% identical to the above sequences) is present.

[0283] In some embodiments, the antigen binding protein comprises a sequence that is at least 90%, 90-95%, and/or 95-99% identical to one or more FRs from the FRs in at least one of sequences of SEQ ID NO: 74, 85, 71, 72, 67, 87, 58, 52, 51, 53, 48, 54, 55, 56, 49, 57, 50, 91, 64, 62, 89, 65, 79, 80, 76, 77, 78, 83, 69, 81, and 60. In some embodiments, 1, 2, 3, or 4 FR (each being at least 90%, 90-95%, and/or 95-99% identical to the above sequences) is present.

[0284] In certain embodiments, an antigen binding protein comprises a light chain comprising a variable region comprising an amino acid sequence at least 90% identical to an amino acid sequence selected from at least one of the sequences of SEQ ID NO: 5, 7, 9, 10, 12,

13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46. In certain embodiments, an antigen binding protein comprises a light chain comprising a variable region comprising an amino acid sequence at least 95% identical to an amino acid sequence selected from at least one of the sequences of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46. In certain embodiments, an antigen binding protein comprises a light chain comprising a variable region comprising an amino acid sequence at least 99% identical to an amino acid sequence selected from at least one of the sequences of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46.

[0285] In some embodiments, the antigen binding protein comprises a sequence that is at least 90%, 90-95%, and/or 95-99% identical to one or more CDRs from the CDRs in at least one of sequences of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46. In some embodiments, 1, 2, 3, 4, 5, or 6 CDR (each being at least 90%, 90-95%, and/or 95-99% identical to the above sequences) is present.

[0286] In some embodiments, the antigen binding protein comprises a sequence that is at least 90%, 90-95%, and/or 95-99% identical to one or more FRs from the FRs in at least one of sequences of SEQ ID NO: 5, 7, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 31, 32, 33, 35, 36, 37, 38, 39, 40, 42, 44, and 46. In some embodiments, 1, 2, 3, or 4 FR (each being at least 90%, 90-95%, and/or 95-99% identical to the above sequences) is present.

[0287] In light of the present disclosure, a skilled artisan will be able to determine suitable variants of the ABPs as set forth herein using well-known techniques. In certain embodiments, one skilled in the art can identify suitable areas of the molecule that may be changed without destroying activity by targeting regions not believed to be important for activity. In certain embodiments, one can identify residues and portions of the molecules that are conserved among similar polypeptides. In certain embodiments, even areas that can be important for biological activity or for structure can be subject to conservative amino acid substitutions without destroying the biological activity or without adversely affecting the polypeptide structure.

[0288] Additionally, one skilled in the art can review structure-function studies identifying residues in similar polypeptides that are important for activity or structure. In view

of such a comparison, one can predict the importance of amino acid residues in a protein that correspond to amino acid residues which are important for activity or structure in similar proteins. One skilled in the art can opt for chemically similar amino acid substitutions for such predicted important amino acid residues.

[0289] One skilled in the art can also analyze the three-dimensional structure and amino acid sequence in relation to that structure in similar ABPs. In view of such information, one skilled in the art can predict the alignment of amino acid residues of an antibody with respect to its three dimensional structure. In certain embodiments, one skilled in the art can choose not to make radical changes to amino acid residues predicted to be on the surface of the protein, since such residues can be involved in important interactions with other molecules. Moreover, one skilled in the art can generate test variants containing a single amino acid substitution at each desired amino acid residue. The variants can then be screened using activity assays known to those skilled in the art. Such variants can be used to gather information about suitable variants. For example, if one discovered that a change to a particular amino acid residue resulted in destroyed, undesirably reduced, or unsuitable activity, variants with such a change can be avoided. In other words, based on information gathered from such routine experiments, one skilled in the art can readily determine the amino acids where further substitutions should be avoided either alone or in combination with other mutations.

[0290] A number of scientific publications have been devoted to the prediction of secondary structure. See Moult J., Curr. Op. in Biotech., 7(4):422-427 (1996), Chou *et al.*, Biochemistry, 13(2):222-245 (1974); Chou *et al.*, Biochemistry, 113(2):211-222 (1974); Chou *et al.*, Adv. Enzymol. Relat. Areas Mol. Biol., 47:45-148 (1978); Chou *et al.*, Ann. Rev. Biochem., 47:251-276 and Chou *et al.*, Biophys. J., 26:367-384 (1979). Moreover, computer programs are currently available to assist with predicting secondary structure. One method of predicting secondary structure is based upon homology modeling. For example, two polypeptides or proteins which have a sequence identity of greater than 30%, or similarity greater than 40% often have similar structural topologies. The recent growth of the protein structural database (PDB) has provided enhanced predictability of secondary structure, including the potential number of folds within a polypeptide's or protein's structure. *See* Holm *et al.*, Nucl. Acid. Res., 27(1):244-247 (1999). It has been suggested (Brenner *et al.*, Curr. Op. Struct. Biol., 7(3):369-376 (1997)) that there are a limited number of folds in a given polypeptide or protein and that once a critical

number of structures have been resolved, structural prediction will become dramatically more accurate.

[0291] Additional methods of predicting secondary structure include "threading" (Jones, D., Curr. Opin. Struct. Biol., 7(3):377-87 (1997); Sippl *et al.*, Structure, 4(1):15-19 (1996)), "profile analysis" (Bowie *et al.*, Science, 253:164-170 (1991); Gribskov *et al.*, Meth. Enzym., 183:146-159 (1990); Gribskov *et al.*, Proc. Nat. Acad. Sci. USA, 84(13):4355-4358 (1987)), and "evolutionary linkage" (See Holm, *supra* (1999), and Brenner, *supra* (1997)).

[0292] In certain embodiments, antigen binding protein variants include glycosylation variants wherein the number and/or type of glycosylation site has been altered compared to the amino acid sequences of a parent polypeptide. In certain embodiments, protein variants comprise a greater or a lesser number of N-linked glycosylation sites than the native protein. An N-linked glycosylation site is characterized by the sequence: Asn-X-Ser or Asn-X-Thr, wherein the amino acid residue designated as X can be any amino acid residue except proline. The substitution of amino acid residues to create this sequence provides a potential new site for the addition of an N-linked carbohydrate chain. Alternatively, substitutions which eliminate this sequence will remove an existing N-linked carbohydrate chain. Also provided is a rearrangement of N-linked carbohydrate chains wherein one or more N-linked glycosylation sites (typically those that are naturally occurring) are eliminated and one or more new N-linked sites are created. Additional preferred antibody variants include cysteine variants wherein one or more cysteine residues are deleted from or substituted for another amino acid (e.g., serine) as compared to the parent amino acid sequence. Cysteine variants can be useful when antibodies must be refolded into a biologically active conformation such as after the isolation of insoluble inclusion bodies. Cysteine variants generally have fewer cysteine residues than the native protein, and typically have an even number to minimize interactions resulting from unpaired cysteines.

[0293] According to certain embodiments, amino acid substitutions are those which: (1) reduce susceptibility to proteolysis, (2) reduce susceptibility to oxidation, (3) alter binding affinity for forming protein complexes, (4) alter binding affinities, and/or (4) confer or modify other physiocochemical or functional properties on such polypeptides. According to certain embodiments, single or multiple amino acid substitutions (in certain embodiments, conservative amino acid substitutions) can be made in the naturally-occurring sequence (in certain

embodiments, in the portion of the polypeptide outside the domain(s) forming intermolecular contacts). In certain embodiments, a conservative amino acid substitution typically may not substantially change the structural characteristics of the parent sequence (e.g., a replacement amino acid should not tend to break a helix that occurs in the parent sequence, or disrupt other types of secondary structure that characterizes the parent sequence). Examples of art-recognized polypeptide secondary and tertiary structures are described in *Proteins, Structures and Molecular Principles* (Creighton, Ed., W. H. Freeman and Company, New York (1984)); *Introduction to Protein Structure* (C. Branden & J. Tooze, eds., Garland Publishing, New York, N.Y. (1991)); and Thornton *et al.*, Nature, 354:105 (1991), which are each incorporated herein by reference.

[0294] In some embodiments, the variants are variants of the nucleic acid sequences of the ABPs disclosed herein. One of skill in the art will appreciate that the above discussion can be used for identifying, evaluating, and/creating ABP protein variants and also for nucleic acid sequences that can encode for those protein variants. Thus, nucleic acid sequences encoding for those protein variants (as well as nucleic acid sequences that encode for the ABPs in Table 2, but are different from those explicitly disclosed herein) are contemplated. For example, an ABP variant can have at least 80, 80-85, 85-90, 90-95, 95-97, 97-99 or greater identity to at least one nucleic acid sequence described in SEQ ID NOs: 152, 153, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151 or at least one to six (and various combinations thereof) of the CDR(s) encoded by the nucleic acid sequences in SEQ ID NOs: 152, 153, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, and 151.

[0295] In some embodiments, the antibody (or nucleic acid sequence encoding it) is a variant if the nucleic acid sequence that encodes the particular ABP (or the nucleic acid sequence itself) can selectively hybridize to any of the nucleic acid sequences that encode the proteins in Table 2 (such as, but not limited to SEQ ID NO: 152, 153, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138,

139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, and 151) under stringent conditions. In one embodiment, suitable moderately stringent conditions include prewashing in a solution of 5XSSC; 0.5% SDS, 1.0 mM EDTA (pH 8:0); hybridizing at 50° C, -65° C, 5xSSC, overnight or, in the event of cross-species homology, at 45° C with 0.5xSSC; followed by washing twice at 65° C for 20 minutes with each of 2x, 0.5x and 0.2xSSC containing 0.1% SDS. Such hybridizing DNA sequences are also within the scope of this invention, as are nucleotide sequences that, due to code degeneracy, encode an antibody polypeptide that is encoded by a hybridizing DNA sequence and the amino acid sequences that are encoded by these nucleic acid sequences. In some embodiments, variants of CDRs include nucleic acid sequences and the amino acid sequences encoded by those sequences, that hybridize to one or more of the CDRs within the sequences noted above (individual CDRs can readily be determined in light of FIGs. 2A-3D, and other embodiments in FIGs. 3CCC-3JJJ and 15A-15D). The phrase "selectively hybridize" referred to in this context means to detectably and selectively bind. Polynucleotides, oligonucleotides and fragments thereof in accordance with the invention selectively hybridize to nucleic acid strands under hybridization and wash conditions that minimize appreciable amounts of detectable binding to nonspecific nucleic acids. High stringency conditions can be used to achieve selective hybridization conditions as known in the art and discussed herein. Generally, the nucleic acid sequence homology between the polynucleotides, oligonucleotides, and fragments of the invention and a nucleic acid sequence of interest will be at least 80%, and more typically with preferably increasing homologies of at least 85%, 90%, 95%, 99%, and 100%. Two amino acid sequences are homologous if there is a partial or complete identity between their sequences. For example, 85% homology means that 85% of the amino acids are identical when the two sequences are aligned for maximum matching. Gaps (in either of the two sequences being matched) are allowed in maximizing matching; gap lengths of 5 or less are preferred with 2 or less being more preferred. Alternatively and preferably, two protein sequences (or polypeptide sequences derived from them of at least 30 amino acids in length) are homologous, as this term is used herein, if they have an alignment score of at more than 5 (in standard deviation units) using the program ALIGN with the mutation data matrix and a gap penalty of 6 or greater. See Dayhoff, M. O., in Atlas of Protein Sequence and Structure, pp. 101-110 (Volume 5, National Biomedical Research Foundation (1972)) and Supplement 2 to this volume, pp. 1-10. The two sequences or parts thereof are more preferably homologous if their amino acids are

greater than or equal to 50% identical when optimally aligned using the ALIGN program. The term "corresponds to" is used herein to mean that a polynucleotide sequence is homologous (i.e., is identical, not strictly evolutionarily related) to all or a portion of a reference polynucleotide sequence, or that a polypeptide sequence is identical to a reference polypeptide sequence. In contradistinction, the term "complementary to" is used herein to mean that the complementary sequence is homologous to all or a portion of a reference polynucleotide sequence. For illustration, the nucleotide sequence "TATAC" corresponds to a reference sequence "TATAC" and is complementary to a reference sequence "GTATA".

Preparation of Antigen Binding Proteins (*e.g.*, Antibodies)

[0296] In certain embodiments, antigen binding proteins (such as antibodies) are produced by immunization with an antigen (*e.g.*, PCSK9). In certain embodiments, antibodies can be produced by immunization with full-length PCSK9, a soluble form of PCSK9, the catalytic domain alone, the mature form of PCSK9 shown in FIG. 1A, a splice variant form of PCSK9, or a fragment thereof. In certain embodiments, the antibodies of the invention can be polyclonal or monoclonal, and/or can be recombinant antibodies. In certain embodiments, antibodies of the invention are human antibodies prepared, for example, by immunization of transgenic animals capable of producing human antibodies (see, for example, PCT Published Application No. W0 93/12227).

[0297] In certain embodiments, certain strategies can be employed to manipulate inherent properties of an antibody, such as the affinity of an antibody for its target. Such strategies include, but are not limited to, the use of site-specific or random mutagenesis of the polynucleotide molecule encoding an antibody to generate an antibody variant. In certain embodiments, such generation is followed by screening for antibody variants that exhibit the desired change, e.g. increased or decreased affinity.

[0298] In certain embodiments, the amino acid residues targeted in mutagenic strategies are those in the CDRs. In certain embodiments, amino acids in the framework regions of the variable domains are targeted. In certain embodiments, such framework regions have been shown to contribute to the target binding properties of certain antibodies. *See, e.g.*, Hudson, Curr. Opin. Biotech., 9:395-402 (1999) and references therein.

[0299] In certain embodiments, smaller and more effectively screened libraries of antibody variants are produced by restricting random or site-directed mutagenesis to hyper-mutation sites in the CDRs, which are sites that correspond to areas prone to mutation during the somatic affinity maturation process. *See, e.g.*, Chowdhury & Pastan, Nature Biotech., 17: 568-572 (1999) and references therein. In certain embodiments, certain types of DNA elements can be used to identify hyper-mutation sites including, but not limited to, certain direct and inverted repeats, certain consensus sequences, certain secondary structures, and certain palindromes. For example, such DNA elements that can be used to identify hyper-mutation sites include, but are not limited to, a tetrabase sequence comprising a purine (A or G), followed by guainine (G), followed by a pyrimidine (C or T), followed by either adenosine or thymidine (A or T) (i.e., A/G-G-C/T-A/T). Another example of a DNA element that can be used to identify hyper-mutation sites is the serine codon, A-G-C/T.

Preparation of Fully Human ABPs (*e.g.*, Antibodies)

[0300] In certain embodiments, a phage display technique is used to generate monoclonal antibodies. In certain embodiments, such techniques produce fully human monoclonal antibodies. In certain embodiments, a polynucleotide encoding a single Fab or Fv antibody fragment is expressed on the surface of a phage particle. *See, e.g.*, Hoogenboom *et al.*, J. Mol. Biol., 227: 381 (1991); Marks *et al.*, *J Mol Biol* 222: 581 (1991); U.S. Patent No. 5,885,793. In certain embodiments, phage are "screened" to identify those antibody fragments having affinity for target. Thus, certain such processes mimic immune selection through the display of antibody fragment repertoires on the surface of filamentous bacteriophage, and subsequent selection of phage by their binding to target. In certain such procedures, high affinity functional neutralizing antibody fragments are isolated. In certain such embodiments (discussed in more detail below), a complete repertoire of human antibody genes is created by cloning naturally rearranged human V genes from peripheral blood lymphocytes. *See, e.g.*, Mullinax *et al.*, Proc Natl Acad Sci (USA), 87: 8095-8099 (1990).

[0301] According to certain embodiments, antibodies of the invention are prepared through the utilization of a transgenic mouse that has a substantial portion of the human antibody producing genome inserted but that is rendered deficient in the production of endogenous, murine antibodies. Such mice, then, are capable of producing human immunoglobulin molecules

and antibodies and are deficient in the production of murine immunoglobulin molecules and antibodies. Technologies utilized for achieving this result are disclosed in the patents, applications and references disclosed in the specification, herein. In certain embodiments, one can employ methods such as those disclosed in PCT Published Application No. WO 98/24893 or in Mendez *et al.*, Nature Genetics, 15:146-156 (1997), which are hereby incorporated by reference for any purpose.

[0302] Generally, fully human monoclonal ABPs (*e.g.*, antibodies) specific for PCSK9 can be produced as follows. Transgenic mice containing human immunoglobulin genes are immunized with the antigen of interest, *e.g.* PCSK9, lymphatic cells (such as B-cells) from the mice that express antibodies are obtained. Such recovered cells are fused with a myeloid-type cell line to prepare immortal hybridoma cell lines, and such hybridoma cell lines are screened and selected to identify hybridoma cell lines that produce antibodies specific to the antigen of interest. In certain embodiments, the production of a hybridoma cell line that produces antibodies specific to PCSK9 is provided.

[0303] In certain embodiments, fully human antibodies are produced by exposing human splenocytes (B or T cells) to an antigen *in vitro*, and then reconstituting the exposed cells in an immunocompromised mouse, *e.g.* SCID or nod/SCID. *See, e.g.*, Brams *et al.*, J.Immunol. 160: 2051-2058 (1998); Carballido *et al.*, Nat. Med., 6: 103-106 (2000). In certain such approaches, engraftment of human fetal tissue into SCID mice (SCID-hu) results in long-term hematopoiesis and human T-cell development. *See, e.g.*, McCune *et al.*, Science, 241:1532-1639 (1988); Ifversen *et al.*, Sem. Immunol., 8:243-248 (1996). In certain instances, humoral immune response in such chimeric mice is dependent on co-development of human T-cells in the animals. *See, e.g.*, Martensson *et al.*, Immunol., 83:1271-179 (1994). In certain approaches, human peripheral blood lymphocytes are transplanted into SCID mice. *See, e.g.*, Mosier *et al.*, Nature, 335:256-259 (1988). In certain such embodiments, when such transplanted cells are treated either with a priming agent, such as Staphylococcal Enterotoxin A (SEA), or with anti-human CD40 monoclonal antibodies, higher levels of B cell production is detected. *See, e.g.*, Martensson *et al.*, Immunol., 84: 224-230 (1995); Murphy *et al.*, Blood, 86:1946-1953 (1995).

[0304] Thus, in certain embodiments, fully human antibodies can be produced by the expression of recombinant DNA in host cells or by expression in hybridoma cells. In other embodiments, antibodies can be produced using the phage display techniques described herein.

[0305] The antibodies described herein were prepared through the utilization of the XenoMouse® technology, as described herein. Such mice, then, are capable of producing human immunoglobulin molecules and antibodies and are deficient in the production of murine immunoglobulin molecules and antibodies. Technologies utilized for achieving the same are disclosed in the patents, applications, and references disclosed in the background section herein. In particular, however, a preferred embodiment of transgenic production of mice and antibodies therefrom is disclosed in U.S. Patent Application Serial No. 08/759,620, filed December 3, 1996 and International Patent Application Nos. WO 98/24893, published June 11, 1998 and WO 00/76310, published December 21, 2000, the disclosures of which are hereby incorporated by reference. *See also* Mendez *et al.*, Nature Genetics, 15:146-156 (1997), the disclosure of which is hereby incorporated by reference.

[0306] Through the use of such technology, fully human monoclonal antibodies to a variety of antigens have been produced. Essentially, XenoMouse® lines of mice are immunized with an antigen of interest (*e.g.* PCSK9), lymphatic cells (such as B-cells) are recovered from the hyper-immunized mice, and the recovered lymphocytes are fused with a myeloid-type cell line to prepare immortal hybridoma cell lines. These hybridoma cell lines are screened and selected to identify hybridoma cell lines that produced antibodies specific to the antigen of interest. Provided herein are methods for the production of multiple hybridoma cell lines that produce antibodies specific to PCSK9 Further, provided herein are characterization of the antibodies produced by such cell lines, including nucleotide and amino acid sequence analyses of the heavy and light chains of such antibodies.

[0307] The production of the XenoMouse® strains of mice is further discussed and delineated in U.S. Patent Application Serial Nos. 07/466,008, filed January 12, 1990, 07/610,515, filed November 8, 1990, 07/919,297, filed July 24, 1992, 07/922,649, filed July 30, 1992, 08/031,801, filed March 15, 1993, 08/112,848, filed August 27, 1993, 08/234,145, filed April 28, 1994, 08/376,279, filed January 20, 1995, 08/430, 938, filed April 27, 1995, 08/464,584, filed June 5, 1995, 08/464,582, filed June 5, 1995, 08/463,191, filed June 5, 1995, 08/462,837, filed June 5, 1995, 08/486,853, filed June 5, 1995, 08/486,857, filed June 5, 1995, 08/486,859, filed June 5, 1995, 08/462,513, filed June 5, 1995, 08/724,752, filed October 2, 1996, 08/759,620, filed December 3, 1996, U.S. Publication 2003/0093820, filed November 30, 2001 and U.S. Patent Nos. 6,162,963, 6,150,584, 6,114,598, 6,075,181, and 5,939,598 and

Japanese Patent Nos. 3 068 180 B2, 3 068 506 B2, and 3 068 507 B2. *See also* European Patent No., EP 0 463 151 B1, grant published June 12, 1996, International Patent Application No., WO 94/02602, published February 3, 1994, International Patent Application No., WO 96/34096, published October 31, 1996, WO 98/24893, published June 11, 1998, WO 00/76310, published December 21, 2000. The disclosures of each of the above-cited patents, applications, and references are hereby incorporated by reference in their entirety.

[0308] In an alternative approach, others, including GenPharm International, Inc., have utilized a "minilocus" approach. In the minilocus approach, an exogenous Ig locus is mimicked through the inclusion of pieces (individual genes) from the Ig locus. Thus, one or more V_H genes, one or more D_H genes, one or more J_H genes, a mu constant region, and usually a second constant region (preferably a gamma constant region) are formed into a construct for insertion into an animal. This approach is described in U.S. Patent No. 5,545,807 to Surani *et al.* and U.S. Patent Nos. 5,545,806, 5,625,825, 5,625,126, 5,633,425, 5,661,016, 5,770,429, 5,789,650, 5,814,318, 5,877,397, 5,874,299, and 6,255,458 each to Lonberg & Kay, U.S. Patent No. 5,591,669 and 6,023.010 to Krimpenfort & Berns, U.S. Patent Nos. 5,612,205, 5,721,367, and 5,789,215 to Berns *et al.*, and U.S. Patent No. 5,643,763 to Choi & Dunn, and GenPharm International U.S. Patent Application Serial Nos. 07/574,748, filed August 29, 1990, 07/575,962, filed August 31, 1990, 07/810,279, filed December 17, 1991, 07/853,408, filed March 18, 1992, 07/904,068, filed June 23, 1992, 07/990,860, filed December 16, 1992, 08/053,131, filed April 26, 1993, 08/096,762, filed July 22, 1993, 08/155,301, filed November 18, 1993, 08/161,739, filed December 3, 1993, 08/165,699, filed December 10, 1993, 08/209,741, filed March 9, 1994, the disclosures of which are hereby incorporated by reference. *See also* European Patent No. 0 546 073 B1, International Patent Application Nos. WO 92/03918, WO 92/22645, WO 92/22647, WO 92/22670, WO 93/12227, WO 94/00569, WO 94/25585, WO 96/14436, WO 97/13852, and WO 98/24884 and U.S. Patent No. 5,981,175, the disclosures of which are hereby incorporated by reference in their entirety. *See further* Taylor *et al.*, 1992, Chen *et al.*, 1993, Tuaillon *et al.*, 1993, Choi *et al.*, 1993, Lonberg *et al.*, (1994), Taylor *et al.*, (1994), and Tuaillon *et al.*, (1995), Fishwild *et al.*, (1996), the disclosures of which are hereby incorporated by reference in their entirety.

[0309] Kirin has also demonstrated the generation of human antibodies from mice in which, through microcell fusion, large pieces of chromosomes, or entire chromosomes, have

been introduced. *See* European Patent Application Nos. 773 288 and 843 961, the disclosures of which are hereby incorporated by reference. Additionally, KM™ mice, which are the result of cross-breeding of Kirin's Tc mice with Medarex's minilocus (Humab) mice have been generated. These mice possess the human IgH transchromosome of the Kirin mice and the kappa chain transgene of the Genpharm mice (Ishida *et al.*, Cloning Stem Cells, (2002) 4:91-102).

[0310] Human antibodies can also be derived by *in vitro* methods. Suitable examples include but are not limited to phage display (CAT, Morphosys, Dyax, Biosite/Medarex, Xoma, Symphogen, Alexion (formerly Proliferon), Affimed) ribosome display (CAT), yeast display, and the like.

[0311] In some embodiments, the antibodies described herein possess human IgG4 heavy chains as well as IgG2 heavy chains. Antibodies can also be of other human isotypes, including IgG1. The antibodies possessed high affinities, typically possessing a Kd of from about 10^{-6} through about 10^{-13} M or below, when measured by various techniques.

[0312] As will be appreciated, antibodies can be expressed in cell lines other than hybridoma cell lines. Sequences encoding particular antibodies can be used to transform a suitable mammalian host cell. Transformation can be by any known method for introducing polynucleotides into a host cell, including, for example packaging the polynucleotide in a virus (or into a viral vector) and transducing a host cell with the virus (or vector) or by transfection procedures known in the art, as exemplified by U.S. Patent Nos. 4,399,216, 4,912,040, 4,740,461, and 4,959,455 (which patents are hereby incorporated herein by reference). The transformation procedure used depends upon the host to be transformed. Methods for introducing heterologous polynucleotides into mammalian cells are well known in the art and include dextran-mediated transfection, calcium phosphate precipitation, polybrene mediated transfection, protoplast fusion, electroporation, encapsulation of the polynucleotide(s) in liposomes, and direct microinjection of the DNA into nuclei.

[0313] Mammalian cell lines available as hosts for expression are well known in the art and include many immortalized cell lines available from the American Type Culture Collection (ATCC), including but not limited to Chinese hamster ovary (CHO) cells, HeLa cells, baby hamster kidney (BHK) cells, monkey kidney cells (COS), human hepatocellular carcinoma cells (e.g., Hep G2), human epithelial kidney 293 cells, and a number of other cell lines. Cell

lines of particular preference are selected through determining which cell lines have high expression levels and produce antibodies with constitutive PCSK9 binding properties.

[0314] In certain embodiments, antibodies and/or ABP are produced by at least one of the following hybridomas: 21B12, 31H4, 16F12, any the other hybridomas listed in Table 2 or disclosed in the examples. In certain embodiments, antigen binding proteins bind to PCSK9 with a dissociation constant (K_D) of less than approximately 1 nM, *e.g.*, 1000pM to 100 pM, 100 pM to 10 pM, 10 pM to 1 pM, and/or 1 pM to 0.1 pM or less.

[0315] In certain embodiments, antigen binding proteins comprise an immunoglobulin molecule of at least one of the IgG1, IgG2, IgG3, IgG4, Ig E, IgA, IgD, and IgM isotype. In certain embodiments, antigen binding proteins comprise a human kappa light chain and/or a human heavy chain. In certain embodiments, the heavy chain is of the IgG1, IgG2, IgG3, IgG4, IgE, IgA, IgD, or IgM isotype. In certain embodiments, antigen binding proteins have been cloned for expression in mammalian cells. In certain embodiments, antigen binding proteins comprise a constant region other than any of the constant regions of the IgG1, IgG2, IgG3, IgG4, IgE, IgA, IgD, and IgM isotype.

[0316] In certain embodiments, antigen binding proteins comprise a human lambda light chain and a human IgG2 heavy chain. In certain embodiments, antigen binding proteins comprise a human lambda light chain and a human IgG4 heavy chain. In certain embodiments, antigen binding proteins comprise a human lambda light chain and a human IgG1, IgG3, IgE, IgA, IgD or IgM heavy chain. In other embodiments, antigen binding proteins comprise a human kappa light chain and a human IgG2 heavy chain. In certain embodiments, antigen binding proteins comprise a human kappa light chain and a human IgG4 heavy chain. In certain embodiments, antigen binding proteins comprise a human kappa light chain and a human IgG1, IgG3, IgE, IgA, IgD or IgM heavy chain. In certain embodiments, antigen binding proteins comprise variable regions of antibodies ligated to a constant region that is neither the constant region for the IgG2 isotype, nor the constant region for the IgG4 isotype. In certain embodiments, antigen binding proteins have been cloned for expression in mammalian cells.

[0317] In certain embodiments, conservative modifications to the heavy and light chains of antibodies from at least one of the hybridoma lines: 21B12, 31H4 and 16F12 (and corresponding modifications to the encoding nucleotides) will produce antibodies to PCSK9 having functional and chemical characteristics similar to those of the antibodies from the

hybridoma lines: 21B12, 31H4 and 16F12. In contrast, in certain embodiments, substantial modifications in the functional and/or chemical characteristics of antibodies to PCSK9 can be accomplished by selecting substitutions in the amino acid sequence of the heavy and light chains that differ significantly in their effect on maintaining (a) the structure of the molecular backbone in the area of the substitution, for example, as a sheet or helical conformation, (b) the charge or hydrophobicity of the molecule at the target site, or (c) the bulk of the side chain.

[0318] For example, a "conservative amino acid substitution" can involve a substitution of a native amino acid residue with a nonnative residue such that there is little or no effect on the polarity or charge of the amino acid residue at that position. Furthermore, any native residue in the polypeptide can also be substituted with alanine, as has been previously described for "alanine scanning mutagenesis."

[0319] Desired amino acid substitutions (whether conservative or non-conservative) can be determined by those skilled in the art at the time such substitutions are desired. In certain embodiments, amino acid substitutions can be used to identify important residues of antibodies to PCSK9, or to increase or decrease the affinity of the antibodies to PCSK9 as described herein.

[0320] In certain embodiments, antibodies of the present invention can be expressed in cell lines other than hybridoma cell lines. In certain embodiments, sequences encoding particular antibodies can be used for transformation of a suitable mammalian host cell. According to certain embodiments, transformation can be by any known method for introducing polynucleotides into a host cell, including, for example packaging the polynucleotide in a virus (or into a viral vector) and transducing a host cell with the virus (or vector) or by transfection procedures known in the art, as exemplified by U.S. Pat. Nos. 4,399,216, 4,912,040, 4,740,461, and 4,959,455 (which patents are hereby incorporated herein by reference for any purpose). In certain embodiments, the transformation procedure used can depend upon the host to be transformed. Methods for introduction of heterologous polynucleotides into mammalian cells are well known in the art and include, but are not limited to, dextran-mediated transfection, calcium phosphate precipitation, polybrene mediated transfection, protoplast fusion, electroporation, encapsulation of the polynucleotide(s) in liposomes, and direct microinjection of the DNA into nuclei.

[0321] Mammalian cell lines available as hosts for expression are well known in the art and include, but are not limited to, many immortalized cell lines available from the American

Type Culture Collection (ATCC), including but not limited to Chinese hamster ovary (CHO) cells, HeLa cells, baby hamster kidney (BHK) cells, monkey kidney cells (COS), human hepatocellular carcinoma cells (e.g., Hep G2), and a number of other cell lines. In certain embodiments, cell lines can be selected through determining which cell lines have high expression levels and produce antibodies with constitutive HGF binding properties. Appropriate expression vectors for mammalian host cells are well known.

[0322] In certain embodiments, antigen binding proteins comprise one or more polypeptides. In certain embodiments, any of a variety of expression vector/host systems can be utilized to express polynucleotide molecules encoding polypeptides comprising one or more ABP components or the ABP itself. Such systems include, but are not limited to, microorganisms, such as bacteria transformed with recombinant bacteriophage, plasmid, or cosmid DNA expression vectors; yeast transformed with yeast expression vectors; insect cell systems infected with virus expression vectors (e.g., baculovirus); plant cell systems transfected with virus expression vectors (e.g., cauliflower mosaic virus, CaMV, tobacco mosaic virus, TMV) or transformed with bacterial expression vectors (e.g., Ti or pBR322 plasmid); or animal cell systems.

[0323] In certain embodiments, a polypeptide comprising one or more ABP components or the ABP itself is recombinantly expressed in yeast. Certain such embodiments use commercially available expression systems, e.g., the *Pichia* Expression System (Invitrogen, San Diego, CA), following the manufacturer's instructions. In certain embodiments, such a system relies on the pre-pro-alpha sequence to direct secretion. In certain embodiments, transcription of the insert is driven by the alcohol oxidase (AOX1) promoter upon induction by methanol.

[0324] In certain embodiments, a secreted polypeptide comprising one or more ABP components or the ABP itself is purified from yeast growth medium. In certain embodiments, the methods used to purify a polypeptide from yeast growth medium is the same as those used to purify the polypeptide from bacterial and mammalian cell supernatants.

[0325] In certain embodiments, a nucleic acid encoding a polypeptide comprising one or more ABP components or the ABP itself is cloned into a baculovirus expression vector, such as pVL1393 (PharMingen, San Diego, CA). In certain embodiments, such a vector can be used according to the manufacturer's directions (PharMingen) to infect *Spodoptera frugiperda* cells in

sF9 protein-free media and to produce recombinant polypeptide. In certain embodiments, a polypeptide is purified and concentrated from such media using a heparin-Sepharose column (Pharmacia).

[0326] In certain embodiments, a polypeptide comprising one or more ABP components or the ABP itself is expressed in an insect system. Certain insect systems for polypeptide expression are well known to those of skill in the art. In one such system, *Autographa californica* nuclear polyhedrosis virus (AcNPV) is used as a vector to express foreign genes in *Spodoptera frugiperda* cells or in *Trichoplusia* larvae. In certain embodiments, a nucleic acid molecule encoding a polypeptide can be inserted into a nonessential gene of the virus, for example, within the polyhedrin gene, and placed under control of the promoter for that gene. In certain embodiments, successful insertion of a nucleic acid molecule will render the nonessential gene inactive. In certain embodiments, that inactivation results in a detectable characteristic. For example, inactivation of the polyhedrin gene results in the production of virus lacking coat protein.

[0327] In certain embodiments, recombinant viruses can be used to infect *S. frugiperda* cells or *Trichoplusia* larvae. *See, e.g.*, Smith *et al.*, J. Virol., 46: 584 (1983); Engelhard *et al.*, Proc. Nat. Acad. Sci. (USA), 91: 3224-7 (1994).

[0328] In certain embodiments, polypeptides comprising one or more ABP components or the ABP itself made in bacterial cells are produced as insoluble inclusion bodies in the bacteria. In certain embodiments, host cells comprising such inclusion bodies are collected by centrifugation; washed in 0.15 M NaCl, 10 mM Tris, pH 8, 1 mM EDTA; and treated with 0.1 mg/ml lysozyme (Sigma, St. Louis, MO) for 15 minutes at room temperature. In certain embodiments, the lysate is cleared by sonication, and cell debris is pelleted by centrifugation for 10 minutes at 12,000 X g. In certain embodiments, the polypeptide-containing pellet is resuspended in 50 mM Tris, pH 8, and 10 mM EDTA; layered over 50% glycerol; and centrifuged for 30 minutes at 6000 X g. In certain embodiments, that pellet can be resuspended in standard phosphate buffered saline solution (PBS) free of Mg^{++} and Ca^{++}. In certain embodiments, the polypeptide is further purified by fractionating the resuspended pellet in a denaturing SDS polyacrylamide gel (*See, e.g.*, Sambrook *et al.*, *supra*). In certain embodiments, such a gel can be soaked in 0.4 M KCl to visualize the protein, which can be excised and electroeluted in gel-running buffer lacking SDS. According to certain embodiments, a

Glutathione-S-Transferase (GST) fusion protein is produced in bacteria as a soluble protein. In certain embodiments, such GST fusion protein is purified using a GST Purification Module (Pharmacia).

[0329] In certain embodiments, it is desirable to "refold" certain polypeptides, e.g., polypeptides comprising one or more ABP components or the ABP itself. In certain embodiments, such polypeptides are produced using certain recombinant systems discussed herein. In certain embodiments, polypeptides are "refolded" and/or oxidized to form desired tertiary structure and/or to generate disulfide linkages. In certain embodiments, such structure and/or linkages are related to certain biological activity of a polypeptide. In certain embodiments, refolding is accomplished using any of a number of procedures known in the art. Exemplary methods include, but are not limited to, exposing the solubilized polypeptide agent to a pH typically above 7 in the presence of a chaotropic agent. An exemplary chaotropic agent is guanidine. In certain embodiments, the refolding/oxidation solution also contains a reducing agent and the oxidized form of that reducing agent. In certain embodiments, the reducing agent and its oxidized form are present in a ratio that will generate a particular redox potential that allows disulfide shuffling to occur. In certain embodiments, such shuffling allows the formation of cysteine bridges. Exemplary redox couples include, but are not limited to, cysteine/cystamine, glutathione/dithiobisGSH, cupric chloride, dithiothreitol DTT/dithiane DTT, and 2-mercaptoethanol (bME)/dithio-bME. In certain embodiments, a co-solvent is used to increase the efficiency of refolding. Exemplary cosolvents include, but are not limited to, glycerol, polyethylene glycol of various molecular weights, and arginine.

[0330] In certain embodiments, one substantially purifies a polypeptide comprising one or more ABP components or the ABP itself. Certain protein purification techniques are known to those of skill in the art. In certain embodiments, protein purification involves crude fractionation of polypeptide fractionations from non-polypeptide fractions. In certain embodiments, polypeptides are purified using chromatographic and/or electrophoretic techniques. Exemplary purification methods include, but are not limited to, precipitation with ammonium sulphate; precipitation with PEG; immunoprecipitation; heat denaturation followed by centrifugation; chromatography, including, but not limited to, affinity chromatography (e.g., Protein-A-Sepharose), ion exchange chromatography, exclusion chromatography, and reverse phase chromatography; gel filtration; hydroxyapatite chromatography; isoelectric focusing;

polyacrylamide gel electrophoresis; and combinations of such and other techniques. In certain embodiments, a polypeptide is purified by fast protein liquid chromatography or by high pressure liquid chromotography (HPLC). In certain embodiments, purification steps can be changed or certain steps can be omitted, and still result in a suitable method for the preparation of a substantially purified polypeptide.

[0331] In certain embodiments, one quantitates the degree of purification of a polypeptide preparation. Certain methods for quantifying the degree of purification are known to those of skill in the art. Certain exemplary methods include, but are not limited to, determining the specific binding activity of the preparation and assessing the amount of a polypeptide within a preparation by SDS/PAGE analysis. Certain exemplary methods for assessing the amount of purification of a polypeptide preparation comprise calculating the binding activity of a preparation and comparing it to the binding activity of an initial extract. In certain embodiments, the results of such a calculation are expressed as "fold purification." The units used to represent the amount of binding activity depend upon the particular assay performed.

[0332] In certain embodiments, a polypeptide comprising one or more ABP components or the ABP itself is partially purified. In certain embodiments, partial purification can be accomplished by using fewer purification steps or by utilizing different forms of the same general purification scheme. For example, in certain embodiments, cation-exchange column chromatography performed utilizing an HPLC apparatus will generally result in a greater "fold purification" than the same technique utilizing a low-pressure chromatography system. In certain embodiments, methods resulting in a lower degree of purification can have advantages in total recovery of polypeptide, or in maintaining binding activity of a polypeptide.

[0333] In certain instances, the electrophoretic migration of a polypeptide can vary, sometimes significantly, with different conditions of SDS/PAGE. *See, e.g.*, Capaldi *et al.*, Biochem. Biophys. Res. Comm., 76: 425 (1977). It will be appreciated that under different electrophoresis conditions, the apparent molecular weights of purified or partially purified polypeptide can be different.

Exemplary Epitopes

[0334] Epitopes to which anti-PCSK9 antibodies bind are provided. In some embodiments, epitopes that are bound by the presently disclosed antibodies are particularly

useful. In some embodiments, antigen binding proteins that bind to any of the epitopes that are bound by the antibodies described herein are useful. In some embodiments, the epitopes bound by any of the antibodies listed in Table 2 and FIGs. 2 and 3 are especially useful. In some embodiments, the epitope is on the catalytic domain PCSK9.

[0335] In certain embodiments, a PCSK9 epitope can be utilized to prevent (*e.g.*, reduce) binding of an anti-PCSK9 antibody or antigen binding protein to PCSK9. In certain embodiments, a PCSK9 epitope can be utilized to decrease binding of an anti-PCSK9 antibody or antigen binding protein to PCSK9. In certain embodiments, a PCSK9 epitope can be utilized to substantially inhibit binding of an anti-PCSK9 antibody or antigen binding protein to PCSK9.

[0336] In certain embodiments, a PCSK9 epitope can be utilized to isolate antibodies or antigen binding proteins that bind to PCSK9. In certain embodiments, a PCSK9 epitope can be utilized to generate antibodies or antigen binding proteins which bind to PCSK9. In certain embodiments, a PCSK9 epitope or a sequence comprising a PCSK9 epitope can be utilized as an immunogen to generate antibodies or antigen binding proteins that bind to PCSK9. In certain embodiments, a PCSK9 epitope can be administered to an animal, and antibodies that bind to PCSK9 can subsequently be obtained from the animal. In certain embodiments, a PCSK9 epitope or a sequence comprising a PCSK9 epitope can be utilized to interfere with normal PCSK9-mediated activity, such as association of PCSK9 with the LDLR.

[0337] In some embodiments, antigen binding proteins disclosed herein bind specifically to N-terminal prodomain, a subtilisin-like catalytic domain and/or a C-terminal domain. In some embodiments, the antigen binding protein binds to the substrate-binding groove of PCSK-9 (described in Cunningham et al., incorporated herein in its entirety by reference).

[0338] In some embodiments, the domain(s)/region(s) containing residues that are in contact with or are buried by an antibody can be identified by mutating specific residues in PCSK9 (e.g., a wild-type antigen) and determining whether the antigen binding protein can bind the mutated or variant PCSK9 protein. By making a number of individual mutations, residues that play a direct role in binding or that are in sufficiently close proximity to the antibody such that a mutation can affect binding between the antigen binding protein and antigen can be identified. From a knowledge of these amino acids, the domain(s) or region(s) of the antigen that contain residues in contact with the antigen binding protein or covered by the antibody can be

elucidated. Such a domain can include the binding epitope of an antigen binding protein. One specific example of this general approach utilizes an arginine/glutamic acid scanning protocol (see, e.g., Nanevicz, T., *et al.*, 1995, *J. Biol. Chem.*, 270:37, 21619-21625 and Zupnick, A., *et al.*, 2006, *J. Biol. Chem.*, 281:29, 20464-20473). In general, arginine and glutamic acids are substituted (typically individually) for an amino acid in the wild-type polypeptide because these amino acids are charged and bulky and thus have the potential to disrupt binding between an antigen binding protein and an antigen in the region of the antigen where the mutation is introduced. Arginines that exist in the wild-type antigen are replaced with glutamic acid. A variety of such individual mutants are obtained and the collected binding results analyzed to determine what residues affect binding.

[0339] Example 39 describes one such arginine/glutamic acid scanning of PCSK9 for PCSK9 antigen binding proteins provided herein. A series of mutant PCSK9 antigens were created, with each mutant antigen having a single mutation. Binding of each mutant PCSK9 antigen with various PCSK9 ABPs was measured and compared to the ability of the selected ABPs to bind wild-type PCSK9 (SEQ ID NO: 303).

[0340] An alteration (for example a reduction or increase) in binding between an antigen binding protein and a variant PCSK9 as used herein means that there is a change in binding affinity (*e.g.*, as measured by known methods such as Biacore testing or the bead based assay described below in the examples), EC_{50}, and/or a change (for example a reduction) in the total binding capacity of the antigen binding protein (for example, as evidenced by a decrease in Bmax in a plot of antigen binding protein concentration versus antigen concentration). A significant alteration in binding indicates that the mutated residue is directly involved in binding to the antigen binding protein or is in close proximity to the binding protein when the binding protein is bound to antigen.

[0341] In some embodiments, a significant reduction in binding means that the binding affinity, EC50, and/or capacity between an antigen binding protein and a mutant PCSK9 antigen is reduced by greater than 10%, greater than 20%, greater than 40 %, greater than 50 %, greater than 55 %, greater than 60 %, greater than 65 %, greater than 70 %, greater than75 %, greater than 80 %, greater than 85 %, greater than 90% or greater than 95% relative to binding between the antigen binding protein and a wild type PCSK9 (e.g., shown in SEQ ID NO: 1 and/or SEQ ID NO: (303). In certain embodiments, binding is reduced below detectable limits.

In some embodiments, a significant reduction in binding is evidenced when binding of an antigen binding protein to a variant PCSK9 protein is less than 50% (for example, less than 40%, 35%, 30%, 25%, 20%, 15% or 10%) of the binding observed between the antigen binding protein and a wild-type PCSK9 protein (for example, the protein of SEQ ID NO: 1 and/or SEQ ID NO: (303). Such binding measurements can be made using a variety of binding assays known in the art. A specific example of one such assay is described in Example 39.

[0342] In some embodiments, antigen binding proteins are provided that exhibit significantly lower binding for a variant PCSK9 protein in which a residue in a wild-type PCSK9 protein (e.g., SEQ ID NO: 1 or SEQ ID NO: 303 is substituted with arginine or glutamic acid. In some embodiments, binding of an antigen binding protein is significantly reduced or increased for a variant PCSK9 protein having any one or more (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, or 244) of the following mutations: R207E, D208R, R185E, R439E, E513R, V538R, E539R, T132R, S351R, A390R, A413R, E582R, D162R, R164E, E167R, S123R, E129R, A311R, D313R, D337R, R519E, H521R, and Q554R as compared to a wild-type PCSK9 protein (*e.g.*, SEQ ID NO: 1 or SEQ ID NO: 303. In the shorthand notation used here, the format is: Wild type residue: Position in polypeptide: Mutant residue, with the numbering of the residues as indicated in SEQ ID NO: 1or SEQ ID NO: 303.

[0343] In some embodiments, binding of an antigen binding protein is significantly reduced or increased for a mutant PCSK9 protein having one or more (e.g., 1, 2, 3, 4, 5, or more) mutations at the following positions: 207, 208, 185, 181, 439, 513, 538, 539, 132, 351, 390, 413, 582, 162, 164, 167, 123, 129, 311, 313, 337, 519, 521, and 554, as shown in SEQ ID NO: 1 as compared to a wild-type PCSK9 protein (e.g., SEQ ID NO: 1 or SEQ ID NO: 303. In some embodiments, binding of an antigen binding protein is reduced or increased for a mutant PCSK9 protein having one or more (e.g., 1, 2, 3, 4, 5, or more) mutations at the following positions: 207, 208, 185, 181, 439, 513, 538, 539, 132, 351, 390, 413, 582, 162, 164, 167, 123, 129, 311, 313, 337, 519, 521, and 554, as shown in SEQ ID NO: 1 as compared to a wild-type PCSK9 protein (e.g., SEQ ID NO: 1 or SEQ ID NO: 303. In some embodiments, binding of an antigen binding protein is substantially reduced or increased for a mutant PCSK9 protein having one or more (e.g., 1, 2, 3, 4, 5, or more) mutations at the following positions: 207, 208, 185, 181, 439, 513, 538, 539, 132, 351, 390, 413, 582, 162, 164, 167, 123, 129, 311, 313, 337, 519, 521, and 554,

within SEQ ID NO: 1 as compared to a wild-type PCSK9 protein (e.g., SEQ ID NO: 1 or SEQ ID NO: 303.

[0344] In some embodiments, binding of an ABP is significantly reduced or increased for a mutant PCSK9 protein having one or more (e.g., 1, 2, 3, 4, 5, etc.) of the following mutations: R207E, D208R, R185E, R439E, E513R, V538R, E539R, T132R, S351R, A390R, A413R, E582R, D162R, R164E, E167R, S123R, E129R, A311R, D313R, D337R, R519E, H521R, and Q554R within SEQ ID NO: 1 or SEQ ID NO: 303, as compared to a wild-type PCSK9 protein (e.g., SEQ ID NO: 1 or SEQ ID NO: 303).

[0345] In some embodiments, binding of an ABP is significantly reduced or increased for a mutant PCSK9 protein having one or more (e.g., 1, 2, 3, 4, 5, etc.) of the following mutations: R207E, D208R, R185E, R439E, E513R, V538R, E539R, T132R, S351R, A390R, A413R, and E582R within SEQ ID NO: 1 or SEQ ID NO: 303, as compared to a wild-type PCSK9 protein (*e.g.*, SEQ ID NO: 1 or SEQ ID NO: 303). In some embodiments, the binding is reduced. In some embodiments, the reduction in binding is observed as a change in EC50. In some embodiments, the change in EC50 is an increase in the numerical value of the EC50 (and thus is a decrease in binding).

[0346] In some embodiments, binding of an ABP is significantly reduced or increased for a mutant PCSK9 protein having one or more (e.g., 1, 2, 3, 4, 5, etc.) of the following mutations: D162R, R164E, E167R, S123R, E129R, A311R, D313R, D337R, R519E, H521R, and Q554R within SEQ ID NO: 1, as compared to a wild-type PCSK9 protein (e.g., SEQ ID NO: 1 or SEQ ID NO: 303). In some embodiments, the binding is reduced. In some embodiments, the reduction in binding is observed as a change in Bmax. In some embodiments, the shift in Bmax is a reduction of the maximum signal generated by the ABP. In some embodiments, for an amino acid to be part of an epitope, the Bmax is reduced by at least 10%, for example, reductions of at least any of the following amounts: 20, 30, 40, 50, 60, 70, 80, 90, 95, 98, 99, or 100 percent can, in some embodiments, indicate that the residue is part of the epitope.

[0308] Although the variant forms just listed are referenced with respect to the wild-type sequence shown in SEQ ID NO: 1 or SEQ ID NO: 303, it will be appreciated that in an allelic variant of PCSK9 the amino acid at the indicated position could differ. Antigen binding proteins showing significantly lower binding for such allelic forms of PCSK9 are also

contemplated. Accordingly, in some embodiments, any of the above embodiments can be compared to an allelic sequence, rather than purely the wild-type sequence shown in FIG. 1A

[0347] In some embodiments, binding of an antigen binding protein is significantly reduced for a variant PCSK9 protein in which the residue at a selected position in the wild-type PCSK9 protein is mutated to any other residue. In some embodiments, the herein described arginine/glutamic acid replacements are used for the identified positions. In some embodiments, alanine is used for the identified positions.

[0348] As noted above, residues directly involved in binding or covered by an antigen binding protein can be identified from scanning results. These residues can thus provide an indication of the domains or regions of SEQ ID NO: 1 (or SEQ ID NO: 303 or SEQ ID NO: 3) that contain the binding region(s) to which antigen binding proteins bind. As can be seen from the results summarized in Example 39, in some embodiments an antigen binding protein binds to a domain containing at least one of amino acids: 207, 208, 185, 181, 439, 513, 538, 539, 132, 351, 390, 413, 582, 162, 164, 167, 123, 129, 311, 313, 337, 519, 521, and 554 of SEQ ID NO: 1 or SEQ ID NO: 303. In some embodiments, the antigen binding protein binds to a region containing at least one of amino acids 207, 208, 185, 181, 439, 513, 538, 539, 132, 351, 390, 413, 582, 162, 164, 167, 123, 129, 311, 313, 337, 519, 521, and 554 of SEQ ID NO: 1 or SEQ ID NO: 303.

[0349] In some embodiments, the antigen binding protein binds to a region containing at least one of amino acids 162, 164, 167, 207 and/or 208 of SEQ ID NO: 1 or SEQ ID NO: 303. In some embodiments, more than one (e.g., 2, 3, 4, or 5) of the identified residues are part of the region that is bound by the ABP. In some embodiments, the ABP competes with ABP 21B12.

[0350] In some embodiments, the antigen binding protein binds to a region containing at least one of amino acid 185 of SEQ ID NO: 1 or SEQ ID NO: 303. In some embodiments, the ABP competes with ABP 31H4.

[0351] In some embodiments, the antigen binding protein binds to a region containing at least one of amino acids 439, 513, 538, and/or 539 of SEQ ID NO: 1 or SEQ ID NO: 303. In some embodiments, more than one (e.g., 2, 3, or 4) of the identified residues are part of the region that is bound by the ABP. In some embodiments, the ABP competes with ABP 31A4.

[0352] In some embodiments, the antigen binding protein binds to a region containing at least one of amino acids 123, 129, 311, 313, 337, 132, 351, 390, and/or 413 of SEQ ID NO: 1 or SEQ ID NO: 303. In some embodiments, more than one (e.g., 2, 3, 4, 5, 6, 7, 8, or 9) of the identified residues are part of the region that is bound by the ABP. In some embodiments, the ABP competes with ABP 12H11.

[0353] In some embodiments, the antigen binding protein binds to a region containing at least one of amino acid 582, 519, 521, and/or 554 of SEQ ID NO: 1 or SEQ ID NO: 303. In some embodiments, more than one (e.g., 2, 3, or 4) of the identified residues are part of the region that is bound by the ABP. In some embodiments, the ABP competes with ABP 3C4.

[0354] In some embodiments, the antigen binding proteins binds to the foregoing regions within a fragment or the full length sequence of SEQ ID NO: 1 or SEQ ID NO: 303. In other embodiments, antigen binding proteins bind to polypeptides consisting of these regions. The reference to "SEQ ID NO: 1 or SEQ ID NO: 303" denotes that one or both of these sequences can be employed or relevant. The phrase does not denote that only one should be employed.

[0355] As noted above, the above description references specific amino acid positions with reference to SEQ ID NO: 1. However, throughout the specification generally, reference is made to a Pro/Cat domain that commences at position 31, which is provided in SEQ ID NO: 3. As noted below, SEQ ID NO: 1 and SEQ ID NO: 303 lack the signal sequence of PCSK9. As such, any comparison between these various disclosures should take this difference in numbering into account. In particular, any amino acid position in SEQ ID NO: 1, will correspond to an amino acid position 30 amino acids further into the protein in SEQ ID NO: 3. For example, position 207 of SEQ ID NO: 1, corresponds to position 237 of SEQ ID NO: 3 (the full length sequence, and the numbering system used in the present specification generally). Table 39.6 outlines how the above noted positions, which reference SEQ ID NO: 1 (and/or SEQ ID NO: 303) correspond to SEQ ID NO: 3 (which includes the signal sequence). Thus, any of the above noted embodiments that are described in regard to SEQ ID NO: 1 (and/or SEQ ID NO: 303), are described in reference to SEQ ID NO: 3, by the noted corresponding positions.

[0356] In some embodiments, ABP 21B12 binds to an epitope including residues 162-167 (e.g., residues D162-E167 of SEQ ID NO: 1). In some embodiments, ABP 12H11

binds to an epitope that includes residues 123-132 (*e.g.*, S123-T132 of SEQ ID NO: 1). In some embodiments, ABP 12H11 binds to an epitope that includes residues 311-313 (*e.g.*, A311-D313 of SEQ ID NO: 1). In some embodiments, ABPs can bind to an epitope that includes any one of these strands of sequences.

Competing Antigen Binding Proteins

[0357] In another aspect, antigen binding proteins are provided that compete with one of the exemplified antibodies or functional fragments binding to the epitope described herein for specific binding to PCSK9. Such antigen binding proteins can also bind to the same epitope as one of the herein exemplified antigen binding proteins, or an overlapping epitope. Antigen binding proteins and fragments that compete with or bind to the same epitope as the exemplified antigen binding proteins are expected to show similar functional properties. The exemplified antigen binding proteins and fragments include those described above, including those with the heavy and light chains, variable region domains and CDRs included in TABLE 2 And/or FIGs. 2-3 and 15 . Thus, as a specific example, the antigen binding proteins that are provided include those that compete with an antibody or antigen binding protein having:

(a) all 6 of the CDRs listed for an antibody listed in FIGs. 2-3 and 15;

(b) a VH and a VL listed for an antibody listed in Table 2; or

(c) two light chains and two heavy chains as specified for an antibody listed in Table 2.

Certain Therapeutic Uses and Pharmaceutical Compositions

[0358] In certain instances, PCSK9 activity correlates with a number of human disease states. For example, in certain instances, too much or too little PCSK9 activity correlates with certain conditions, such as hypercholesterolemia. Therefore, in certain instances, modulating PCSK9 activity can be therapeutically useful. In certain embodiments, a neutralizing antigen binding protein to PCSK9 is used to modulate at least one PCSK9 activity (*e.g.*, binding to LDLR). Such methods can treat and/or prevent and/or reduce the risk of disorders that relate to elevated serum cholesterol levels or in which elevated cholesterol levels are relevant.

[0359] As will be appreciated by one of skill in the art, in light of the present disclosure, disorders that relate to, involve, or can be influenced by varied cholesterol, LDL, or LDLR levels can be addressed by various embodiments of the antigen binding proteins. In some

embodiments, a "cholesterol related disorder" (which includes "serum cholesterol related disorders") includes any one or more of the following: hypercholesterolemia, heart disease, metabolic syndrome, diabetes, coronary heart disease, stroke, cardiovascular diseases, Alzheimers disease and generally dyslipidemias, which can be manifested, for example, by an elevated total serum cholesterol, elevated LDL, elevated triglycerides, elevated VLDL, and/or low HDL. Some non-limiting examples of primary and secondary dyslipidemias that can be treated using an ABP, either alone, or in combination with one or more other agents include the metabolic syndrome, diabetes mellitus, familial combined hyperlipidemia, familial hypertriglyceridemia, familial hypercholesterolemias, including heterozygous hypercholesterolemia, homozygous hypercholesterolemia, familial defective apoplipoprotein B-100; polygenic hypercholesterolemia; remnant removal disease, hepatic lipase deficiency; dyslipidemia secondary to any of the following: dietary indiscretion, hypothyroidism, drugs including estrogen and progestin therapy, beta-blockers, and thiazide diuretics; nephrotic syndrome, chronic renal failure, Cushing's syndrome, primary biliary cirrhosis, glycogen storage diseases, hepatoma, cholestasis, acromegaly, insulinoma, isolated growth hormone deficiency, and alcohol-induced hypertriglyceridemia. ABP can also be useful in preventing or treating atherosclerotic diseases, such as, for example, coronary heart disease, coronary artery disease, peripheral arterial disease, stroke (ischaemic and hemorrhagic), angina pectoris, or cerebrovascular disease and acute coronary syndrome, myocardial infarction. In some embodiments, the ABP is useful in reducing the risk of: nonfatal heart attacks, fatal and non-fatal strokes, certain types of heart surgery, hospitalization for heart failure, chest pain in patients with heart disease, and/or cardiovascular events because of established heart disease such as prior heart attack, prior heart surgery, and/or chest pain with evidence of clogged arteries. In some embodiments, the ABP and methods can be used to reduce the risk of recurrent cardiovascular events.

[0360] As will be appreciated by one of skill in the art, diseases or disorders that are generally addressable (either treatable or preventable) through the use of statins can also benefit from the the application of the instant antigen binding proteins. In addition, in some embodiments, disorders or disease that can benefit from the prevention of cholesterol synthesis or increased LDLR expression can also be treated by various embodiments of the antigen binding proteins. In addition, as will be appreciated by one of skill in the art, the use of the anti-

PCSK9 antibodies can be especially useful in the treatment of Diabetes. Not only is Diabetes a risk factor for coronary heart disease, but insulin increases the expression of PCSK9. That is, people with Diabetes have elevated plasma lipid levels (which can be related to high PCSK9 levels) and can benefit from lowering those levels. This is generally discussed in more detail in Costet et al. ("Hepatic PCSK9 Expression is Regulated by Nutirtional Status via Insulin and Sterol Regulatiory Element-binding Protein 1C", J. Biol. Chem., 281: 6211-6218, 2006), the entirety of which is incorporated herein by reference.

[0361] In some embodiments, the antigen binding protein is administered to those who have diabetes mellitus, abdominal aortic aneurysm, atherosclerosis and/or peripheral vascular disease in order to decrease their serum cholesterol levels to a safer range. In some embodiments, the antigen binding protein is administered to patients at risk of developing any of the herein described disorders. In some embodiments, the ABPs are administered to subjects that smoke, have hypertension or a familial history of early heart attacks.

[0362] In some embodiments, a subject is administered an ABP if they are at a moderate risk or higher on the 2004 NCEP treatment goals. In some embodiments, the ABP is admininstered to a subject if the subject's LDL cholesterol level is greater than 160 mg/dl. In some embodiments, the ABP is administered if the subjects LDL cholesterol level is greater than 130 (and they have a moderate or moderately high risk according to the 2004 NCEP treatment goals). In some embodiments, the ABP is administered if the subjects LDL cholesterol level is greater than 100 (and they have a high or very high risk according to the 2004 NCEP treatment goals).

[0363] A physician will be able to select an appropriate treatment indications and target lipid levels depending on the individual profile of a particular patient. One well-accepted standard for guiding treatment of hyperlipidemia is the Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of the High Blood Cholesterol in Adults (Adult Treatment Panel III) Final Report, National Institutes of Health, NIH Publication No. 02-5215 (2002), the printed publication of which is hereby incorporated by reference in its entirety.

[0364] In some embodiments, antigen binding proteins to PCSK9 are used to decrease the amount of PCSK9 activity from an abnormally high level or even a normal level. In some embodiments, antigen binding proteins to PCSK9 are used to treat or prevent

hypercholesterolemia and/or in the preparation of medicaments therefore and/or for other cholesterol related disorders (such as those noted herein). In certain embodiments, an antigen binding protein to PCSK9 is used to treat or prevent conditions such as hypercholesterolemia in which PCSK9 activity is normal. In such conditions, for example, reduction of PCSK9 activity to below normal can provide a therapeutic effect.

[0365] In some embodiments, more than one antigen binding protein to PCSK9 is used to modulate PCSK9 activity.

[0366] In certain embodiments, methods are provided of treating a cholesterol related disorder, such as hypercholesterolemia comprising administering a therapeutically effective amount of one or more antigen binding proteins to PCSK9 and another therapeutic agent.

[0367] In certain embodiments, an antigen binding protein to PCSK9 is administered alone. In certain embodiments, an antigen binding protein to PCSK9 is administered prior to the administration of at least one other therapeutic agent. In certain embodiments, an antigen binding protein to PCSK9 is administered concurrent with the administration of at least one other therapeutic agent. In certain embodiments, an antigen binding protein to PCSK9 is administered subsequent to the administration of at least one other therapeutic agent. In other embodiments, an antigen binding protein to PCSK9 is administered prior to the administration of at least one other therapeutic agent. Therapeutic agents (apart from the antigen binding protein), include, but are not limited to, at least one other cholesterol-lowering (serum and/or total body cholesterol) agent or an agent. In some embodiments, the agent increases the expression of LDLR, have been observed to increase serum HDL levels, lower LDL levels or lower triglyceride levels. Exemplary agents include, but are not limited to, statins (atorvastatin, cerivastatin, fluvastatin, lovastatin, mevastatin, pitavastatin, pravastatin, rosuvastatin, simvastatin), Nicotinic acid (Niacin) (NIACOR, NIASPAN (slow release niacin), SLO-NIACIN (slow release niacin)), Fibric acid (LOPID (Gemfibrozil), TRICOR (fenofibrate), Bile acid sequestrants (QUESTRAN (cholestyramine), colesevelam (WELCHOL), COLESTID (colestipol)), Cholesterol absorption inhibitors (ZETIA (ezetimibe)), Combining nicotinic acid with statin (ADVICOR (LOVASTATIN and NIASPAN), Combining a statin with an absorption inhibitor (VYTORIN (ZOCOR and ZETIA) and/or lipid modifying agents. In some embodiments, the ABP is combined with PPAR gamma agonsits, PPAR alpha/gamma agonists, squalene synthase inhibitors, CETP inhibitors, anti-hypertensives, anti-diabetic agents (such as sulphonyl ureas,

insulin, GLP-1 analogs, DDPIV inhibitors), ApoB modulators, MTP inhibitoris and /or arteriosclerosis obliterans treatments. In some embodiments, the ABP is combined with an agent that increases the level of LDLR protein in a subject, such as statins, certain cytokines like oncostatin M, estrogen, and/or certain herbal ingredients such as berberine. In some embodiments, the ABP is combined with an agent that increases serum cholesterol levels in a subject (such as certain anti-psycotic agents, certain HIV protease inhibitors, dietary factors such as high fructose, sucrose, cholesterol or certain fatty acids and certain nuclear receptor agonists and antagonists for RXR, RAR, LXR, FXR). In some embodiments, the ABP is combined with an agent that increases the level of PCSK9 in a subject, such as statins and/or insulin. The combination of the two can allow for the undesireable side-effects of other agents to be mitigated by the ABP. As will be appreciated by one of skill in the art, in some embodiments, the ABP is combined with the other agent/compound. In some embodiments, the ABP and other agent are administered concurrently. In some embodiments, the ABP and other agent are not administered simultaneously, with the ABP being administered before or after the agent is administered. In some embodiments, the subject receives both the ABP and the other agent (that increases the level of LDLR) during a same period of prevention, occurrence of a disorder, and/or period of treatment.

[0368] Pharmaceutical compositions of the invention can be administered in combination therapy, *i.e.*, combined with other agents. In certain embodiments, the combination therapy comprises an antigen binding protein capable of binding PCSK9, in combination with at least one anti-cholesterol agent. Agents include, but are not limited to, in vitro synthetically prepared chemical compositions, antibodies, antigen binding regions, and combinations and conjugates thereof. In certain embodiments, an agent can act as an agonist, antagonist, alllosteric modulator, or toxin. In certain embodiments, an agent can act to inhibit or stimulate its target (e.g., receptor or enzyme activation or inhibition), and thereby promote increased expression of LDLR or decrease serum cholesterol levels.

[0369] In certain embodiments, an antigen binding protein to PCSK9 can be administered prior to, concurrent with, and subsequent to treatment with a cholesterol-lowering (serum and/or total cholesterol) agent. In certain embodiments, an antigen binding protein to PCSK9 can be administered prophylactially to prevent or mitigate the onset of hypercholesterolemia, heart disease, diabetes, and/or any of the cholesterol related disorder. In

certain embodiments, an antigen binding protein to PCSK9 can be administered for the treatment of an existing hypercholesterolemia condition. In some embodiments, the ABP delays the onset of the disorder and/or symptoms associated with the disorder. In some embodiments, the ABP is provided to a subject lacking any sympotoms of any one of the cholesterol related disorders or a subset thereof.

[0370] In certain embodiments, an antigen binding protein to PCSK9 is used with particular therapeutic agents to treat various cholesterol related disorders, such as hypercholesterolemia. In certain embodiments, in view of the condition and the desired level of treatment, two, three, or more agents can be administered. In certain embodiments, such agents can be provided together by inclusion in the same formulation. In certain embodiments, such agent(s) and an antigen binding protein to PCSK9 can be provided together by inclusion in the same formulation. In certain embodiments, such agents can be formulated separately and provided together by inclusion in a treatment kit. In certain embodiments, such agents and an antigen binding protein to PCSK9 can be formulated separately and provided together by inclusion in a treatment kit. In certain embodiments, such agents can be provided separately. In certain embodiments, when administered by gene therapy, the genes encoding protein agents and/or an antigen binding protein to PCSK9 can be included in the same vector. In certain embodiments, the genes encoding protein agents and/or an antigen binding protein to PCSK9 can be under the control of the same promoter region. In certain embodiments, the genes encoding protein agents and/or an antigen binding protein to PCSK9 can be in separate vectors.

[0371] In certain embodiments, the invention provides for pharmaceutical compositions comprising an antigen binding protein to PCSK9 together with a pharmaceutically acceptable diluent, carrier, solubilizer, emulsifier, preservative and/or adjuvant.

[0372] In certain embodiments, the invention provides for pharmaceutical compositions comprising an antigen binding protein to PCSK9 and a therapeutically effective amount of at least one additional therapeutic agent, together with a pharmaceutically acceptable diluent, carrier, solubilizer, emulsifier, preservative and/or adjuvant.

[0373] In certain embodiments, an antigen binding protein to PCSK9 can be used with at least one therapeutic agent for inflammation. In certain embodiments, an antigen binding protein to PCSK9 can be used with at least one therapeutic agent for an immune disorder. Exemplary therapeutic agents for inflammation and immune disorders include, but are not

limited to cyclooxygenase type 1 (COX-1) and cyclooxygenase type 2 (COX-2) inhibitors small molecule modulators of 38 kDa mitogen-activated protein kinase (p38-MAPK); small molecule modulators of intracellular molecules involved in inflammation pathways, wherein such intracellular molecules include, but are not limited to, jnk, IKK, NF-κB, ZAP70, and lck. Certain exemplary therapeutic agents for inflammation are described, e.g., in C.A. Dinarello & L.L. Moldawer *Proinflammatory and Anti-Inflammatory Cytokines in Rheumatoid Arthritis: A Primer for Clinicians* Third Edition (2001) Amgen Inc. Thousand Oaks, CA.

[0374] In certain embodiments, pharmaceutical compositions will include more than one different antigen binding protein to PCSK9. In certain embodiments, pharmaceutical compositions will include more than one antigen binding protein to PCSK9 wherein the antigen binding proteins to PCSK9 bind more than one epitope. In some embodiments, the various antigen binding proteins will not compete with one another for binding to PCSK9. In some embodiments, any of the antigen binding proteins depicted in Table 2 and FIGs. 2 and/or 3 can be combined together in a pharmaceutical composition.

[0375] In certain embodiments, acceptable formulation materials preferably are nontoxic to recipients at the dosages and concentrations employed. In some embodiments, the formulation material(s) are for s.c. and/or I.V. administration. In certain embodiments, the pharmaceutical composition can contain formulation materials for modifying, maintaining or preserving, for example, the pH, osmolarity, viscosity, clarity, color, isotonicity, odor, sterility, stability, rate of dissolution or release, adsorption or penetration of the composition. In certain embodiments, suitable formulation materials include, but are not limited to, amino acids (such as glycine, glutamine, asparagine, arginine or lysine); antimicrobials; antioxidants (such as ascorbic acid, sodium sulfite or sodium hydrogen-sulfite); buffers (such as borate, bicarbonate, Tris-HCl, citrates, phosphates or other organic acids); bulking agents (such as mannitol or glycine); chelating agents (such as ethylenediamine tetraacetic acid (EDTA)); complexing agents (such as caffeine, polyvinylpyrrolidone, beta-cyclodextrin or hydroxypropyl-beta-cyclodextrin); fillers; monosaccharides; disaccharides; and other carbohydrates (such as glucose, mannose or dextrins); proteins (such as serum albumin, gelatin or immunoglobulins); coloring, flavoring and diluting agents; emulsifying agents; hydrophilic polymers (such as polyvinylpyrrolidone); low molecular weight polypeptides; salt-forming counterions (such as sodium); preservatives (such as benzalkonium chloride, benzoic acid, salicylic acid, thimerosal, phenethyl alcohol,

methylparaben, propylparaben, chlorhexidine, sorbic acid or hydrogen peroxide); solvents (such as glycerin, propylene glycol or polyethylene glycol); sugar alcohols (such as mannitol or sorbitol); suspending agents; surfactants or wetting agents (such as pluronics, PEG, sorbitan esters, polysorbates such as polysorbate 20, polysorbate 80, triton, tromethamine, lecithin, cholesterol, tyloxapal); stability enhancing agents (such as sucrose or sorbitol); tonicity enhancing agents (such as alkali metal halides, preferably sodium or potassium chloride, mannitol sorbitol); delivery vehicles; diluents; excipients and/or pharmaceutical adjuvants. (*Remington's Pharmaceutical Sciences*, 18th Edition, A.R. Gennaro, ed., Mack Publishing Company (1995). In some embodiments, the formulation comprises PBS; 20mM NaOAC, pH 5.2, 50mM NaCl; and/or 10mM NAOAC, pH 5.2, 9% Sucrose.

[0376] In certain embodiments, an antigen binding protein to PCSK9 and/or a therapeutic molecule is linked to a half-life extending vehicle known in the art. Such vehicles include, but are not limited to, polyethylene glycol, glycogen (e.g., glycosylation of the ABP), and dextran. Such vehicles are described, e.g., in U.S. Application Serial No. 09/428,082, now US Patent No. 6,660,843 and published PCT Application No. WO 99/25044, which are hereby incorporated by reference for any purpose.

[0377] In certain embodiments, the optimal pharmaceutical composition will be determined by one skilled in the art depending upon, for example, the intended route of administration, delivery format and desired dosage. See, for example, *Remington's Pharmaceutical Sciences, supra*. In certain embodiments, such compositions may influence the physical state, stability, rate of *in vivo* release and rate of *in vivo* clearance of the antibodies of the invention.

[0378] In certain embodiments, the primary vehicle or carrier in a pharmaceutical composition can be either aqueous or non-aqueous in nature. For example, in certain embodiments, a suitable vehicle or carrier can be water for injection, physiological saline solution or artificial cerebrospinal fluid, possibly supplemented with other materials common in compositions for parenteral administration. In some embodiments, the saline comprises isotonic phosphate-buffered saline. In certain embodiments, neutral buffered saline or saline mixed with serum albumin are further exemplary vehicles. In certain embodiments, pharmaceutical compositions comprise Tris buffer of about pH 7.0-8.5, or acetate buffer of about pH 4.0-5.5, which can further include sorbitol or a suitable substitute therefore. In certain embodiments, a

composition comprising an antigen binding protein to PCSK9, with or without at least one additional therapeutic agents, can be prepared for storage by mixing the selected composition having the desired degree of purity with optional formulation agents (*Remington's Pharmaceutical Sciences, supra*) in the form of a lyophilized cake or an aqueous solution. Further, in certain embodiments, a composition comprising an antigen binding protein to PCSK9, with or without at least one additional therapeutic agents, can be formulated as a lyophilizate using appropriate excipients such as sucrose.

[0379] In certain embodiments, the pharmaceutical composition can be selected for parenteral delivery. In certain embodiments, the compositions can be selected for inhalation or for delivery through the digestive tract, such as orally. The preparation of such pharmaceutically acceptable compositions is within the ability of one skilled in the art.

[0380] In certain embodiments, the formulation components are present in concentrations that are acceptable to the site of administration. In certain embodiments, buffers are used to maintain the composition at physiological pH or at a slightly lower pH, typically within a pH range of from about 5 to about 8.

[0381] In certain embodiments, when parenteral administration is contemplated, a therapeutic composition can be in the form of a pyrogen-free, parenterally acceptable aqueous solution comprising a desired antigen binding protein to PCSK9, with or without additional therapeutic agents, in a pharmaceutically acceptable vehicle. In certain embodiments, a vehicle for parenteral injection is sterile distilled water in which an antigen binding protein to PCSK9, with or without at least one additional therapeutic agent, is formulated as a sterile, isotonic solution, properly preserved. In certain embodiments, the preparation can involve the formulation of the desired molecule with an agent, such as injectable microspheres, bio-erodible particles, polymeric compounds (such as polylactic acid or polyglycolic acid), beads or liposomes, that can provide for the controlled or sustained release of the product which can then be delivered via a depot injection. In certain embodiments, hyaluronic acid can also be used, and can have the effect of promoting sustained duration in the circulation. In certain embodiments, implantable drug delivery devices can be used to introduce the desired molecule.

[0382] In certain embodiments, a pharmaceutical composition can be formulated for inhalation. In certain embodiments, an antigen binding protein to PCSK9, with or without at least one additional therapeutic agent, can be formulated as a dry powder for inhalation. In

certain embodiments, an inhalation solution comprising an antigen binding protein to PCSK9, with or without at least one additional therapeutic agent, can be formulated with a propellant for aerosol delivery. In certain embodiments, solutions can be nebulized. Pulmonary administration is further described in PCT application no. PCT/US94/001875, which describes pulmonary delivery of chemically modified proteins.

[0383] In certain embodiments, it is contemplated that formulations can be administered orally. In certain embodiments, an antigen binding protein to PCSK9, with or without at least one additional therapeutic agents, that is administered in this fashion can be formulated with or without those carriers customarily used in the compounding of solid dosage forms such as tablets and capsules. In certain embodiments, a capsule can be designed to release the active portion of the formulation at the point in the gastrointestinal tract when bioavailability is maximized and pre-systemic degradation is minimized. In certain embodiments, at least one additional agent can be included to facilitate absorption of an antigen binding protein to PCSK9 and/or any additional therapeutic agents. In certain embodiments, diluents, flavorings, low melting point waxes, vegetable oils, lubricants, suspending agents, tablet disintegrating agents, and binders can also be employed.

[0384] In certain embodiments, a pharmaceutical composition can involve an effective quantity of an antigen binding protein to PCSK9, with or without at least one additional therapeutic agents, in a mixture with non-toxic excipients which are suitable for the manufacture of tablets. In certain embodiments, by dissolving the tablets in sterile water, or another appropriate vehicle, solutions can be prepared in unit-dose form. In certain embodiments, suitable excipients include, but are not limited to, inert diluents, such as calcium carbonate, sodium carbonate or bicarbonate, lactose, or calcium phosphate; or binding agents, such as starch, gelatin, or acacia; or lubricating agents such as magnesium stearate, stearic acid, or talc.

[0385] Additional pharmaceutical compositions will be evident to those skilled in the art, including formulations involving antigen binding proteins to PCSK9, with or without at least one additional therapeutic agent(s), in sustained- or controlled-delivery formulations. In certain embodiments, techniques for formulating a variety of other sustained- or controlled-delivery means, such as liposome carriers, bio-erodible microparticles or porous beads and depot injections, are also known to those skilled in the art. See for example, PCT Application No. PCT/US93/00829 which describes the controlled release of porous polymeric microparticles for

the delivery of pharmaceutical compositions. In certain embodiments, sustained-release preparations can include semipermeable polymer matrices in the form of shaped articles, *e.g.* films, or microcapsules. Sustained release matrices can include polyesters, hydrogels, polylactides (U.S. 3,773,919 and EP 058,481), copolymers of L-glutamic acid and gamma ethyl-L-glutamate (Sidman *et al.*, Biopolymers, 22:547-556 (1983)), poly (2-hydroxyethyl-methacrylate) (Langer *et al.*, J. Biomed. Mater. Res., 15:167-277 (1981) and Langer, Chem. Tech., 12:98-105 (1982)), ethylene vinyl acetate (Langer *et al.*, *supra*) or poly-D(-)-3-hydroxybutyric acid (EP 133,988). In certain embodiments, sustained release compositions can also include liposomes, which can be prepared by any of several methods known in the art. *See, e.g.*, Eppstein *et al.*, Proc. Natl. Acad. Sci. USA, 82:3688-3692 (1985); EP 036,676; EP 088,046 and EP 143,949.

[0386] The pharmaceutical composition to be used for *in vivo* administration typically is sterile. In certain embodiments, this can be accomplished by filtration through sterile filtration membranes. In certain embodiments, where the composition is lyophilized, sterilization using this method can be conducted either prior to or following lyophilization and reconstitution. In certain embodiments, the composition for parenteral administration can be stored in lyophilized form or in a solution. In certain embodiments, parenteral compositions generally are placed into a container having a sterile access port, for example, an intravenous solution bag or vial having a stopper pierceable by a hypodermic injection needle.

[0387] In certain embodiments, once the pharmaceutical composition has been formulated, it can be stored in sterile vials as a solution, suspension, gel, emulsion, solid, or as a dehydrated or lyophilized powder. In certain embodiments, such formulations can be stored either in a ready-to-use form or in a form (*e.g.*, lyophilized) that is reconstituted prior to administration.

[0388] In certain embodiments, kits are provided for producing a single-dose administration unit. In certain embodiments, the kit can contain both a first container having a dried protein and a second container having an aqueous formulation. In certain embodiments, kits containing single and multi-chambered pre-filled syringes (*e.g.*, liquid syringes and lyosyringes) are included.

[0389] In certain embodiments, the effective amount of a pharmaceutical composition comprising an antigen binding protein to PCSK9, with or without at least one additional

therapeutic agent, to be employed therapeutically will depend, for example, upon the therapeutic context and objectives. One skilled in the art will appreciate that the appropriate dosage levels for treatment, according to certain embodiments, will thus vary depending, in part, upon the molecule delivered, the indication for which an antigen binding protein to PCSK9, with or without at least one additional therapeutic agent, is being used, the route of administration, and the size (body weight, body surface or organ size) and/or condition (the age and general health) of the patient. In certain embodiments, the clinician can titer the dosage and modify the route of administration to obtain the optimal therapeutic effect. In certain embodiments, a typical dosage can range from about 0.1 µg/kg to up to about 100 mg/kg or more, depending on the factors mentioned above. In certain embodiments, the dosage can range from 0.1 µg/kg up to about 100 mg/kg; or 1 µg/kg up to about 100 mg/kg; or 5 µg/kg up to about 100 mg/kg.

[0390] In certain embodiments, the frequency of dosing will take into account the pharmacokinetic parameters of an antigen binding protein to PCSK9and/or any additional therapeutic agents in the formulation used. In certain embodiments, a clinician will administer the composition until a dosage is reached that achieves the desired effect. In certain embodiments, the composition can therefore be administered as a single dose, or as two or more doses (which may or may not contain the same amount of the desired molecule) over time, or as a continuous infusion via an implantation device or catheter. Further refinement of the appropriate dosage is routinely made by those of ordinary skill in the art and is within the ambit of tasks routinely performed by them. In certain embodiments, appropriate dosages can be ascertained through use of appropriate dose-response data. In some embodiments, the amount and frequency of administration can take into account the desired cholesterol level (serum and/or total) to be obtained and the subject's present cholesterol level, LDL level, and/or LDLR levels, all of which can be obtained by methods that are well known to those of skill in the art.

[0391] In certain embodiments, the route of administration of the pharmaceutical composition is in accord with known methods, *e.g.* orally, through injection by intravenous, intraperitoneal, intracerebral (intra-parenchymal), intracerebroventricular, intramuscular, subcutaneously, intra-ocular, intraarterial, intraportal, or intralesional routes; by sustained release systems or by implantation devices. In certain embodiments, the compositions can be administered by bolus injection or continuously by infusion, or by implantation device.

[0392] In certain embodiments, the composition can be administered locally via implantation of a membrane, sponge or another appropriate material onto which the desired molecule has been absorbed or encapsulated. In certain embodiments, where an implantation device is used, the device can be implanted into any suitable tissue or organ, and delivery of the desired molecule can be via diffusion, timed-release bolus, or continuous administration.

[0393] In certain embodiments, it can be desirable to use a pharmaceutical composition comprising an antigen binding protein to PCSK9, with or without at least one additional therapeutic agent, in an *ex vivo* manner. In such instances, cells, tissues and/or organs that have been removed from the patient are exposed to a pharmaceutical composition comprising an antigen binding protein to PCSK9, with or without at least one additional therapeutic agent, after which the cells, tissues and/or organs are subsequently implanted back into the patient.

[0394] In certain embodiments, an antigen binding protein to PCSK9 and/or any additional therapeutic agents can be delivered by implanting certain cells that have been genetically engineered, using methods such as those described herein, to express and secrete the polypeptides. In certain embodiments, such cells can be animal or human cells, and can be autologous, heterologous, or xenogeneic. In certain embodiments, the cells can be immortalized. In certain embodiments, in order to decrease the chance of an immunological response, the cells can be encapsulated to avoid infiltration of surrounding tissues. In certain embodiments, the encapsulation materials are typically biocompatible, semi-permeable polymeric enclosures or membranes that allow the release of the protein product(s) but prevent the destruction of the cells by the patient's immune system or by other detrimental factors from the surrounding tissues.

[0395] Based on the ability of ABPs to significantly neutralize PCSK9 activity (as demonstrated in the Examples below), these ABPs will have therapeutic effects in treating and preventing symptoms and conditions resulting from PCSK9-mediated activity, such as hypercholesterolemia.

Diagnostic Applications

[0396] In some embodiments, the ABP is used as a diagnostic tool. The ABP can be used to assay the amount of PCSK9 present in a sample and/or subject. As will be appreciated by one of skill in the art, such ABPs need not be neutralizing ABPs. In some embodiments, the

diagnostic ABP is not a neutralizing ABP. In some embodiments, the diagnostic ABP binds to a different epitope than the neutralizing ABP binds to. In some embodiments, the two ABPs do not compete with one another.

[0397] In some embodiments, the ABPs disclosed herein are used or provided in an assay kit and/or method for the detection of PCSK9 in mammalian tissues or cells in order to screen/diagnose for a disease or disorder associated with changes in levels of PCSK9. The kit comprises an ABP that binds PCSK9 and means for indicating the binding of the ABP with PCSK9, if present, and optionally PCSK9 protein levels. Various means for indicating the presence of an ABP can be used. For example, fluorophores, other molecular probes, or enzymes can be linked to the ABP and the presence of the ABP can be observed in a variety of ways. The method for screening for such disorders can involve the use of the kit, or simply the use of one of the disclosed ABPs and the determination of whether the ABP binds to PCSK9 in a sample. As will be appreciated by one of skill in the art, high or elevated levels of PCSK9 will result in larger amounts of the ABP binding to PCSK9 in the sample. Thus, degree of ABP binding can be used to determine how much PCSK9 is in a sample. Subjects or samples with an amount of PCSK9 that is greater than a predetermined amount (*e.g.*, an amount or range that a person without a PCSK9 related disorder would have) can be characterized as having a PCSK9 mediated disorder. In some embodiments, the ABP is administered to a subject taking a statin, in order to determine if the statin has increased the amount of PCSK9 in the subject.

[0398] In some embodiments, the ABP is a non-neutralizing ABP and is used to determine the amount of PCSK9 in a subject receiving an ABP and/or statin treatment.

EXAMPLES

[0399] The following examples, including the experiments conducted and results achieved, are provided for illustrative purposes only and are not to be construed as limiting the present invention.

EXAMPLE 1

Immunization and Titering

Generation of Anti-PCSK9 Antibodies and Hybridomas

[0400] Antibodies to the mature form of PCSK9 (depicted as the sequence in FIG. 1A, with the pro-domain underlined), were raised in XenoMouse® mice (Abgenix, Fremont, CA), which are mice containing human immunoglobulin genes. Two groups of XenoMouse® mice, group 1 and 2, were used to produce antibodies to PCSK9. Group 1 included mice of the XenoMouse® strain XMG2-KL, which produces fully human $IgG2_\kappa$ and $IgG2\lambda$ antibodies. Group 1 mice were immunized with human PCSK9. PCSK9 was prepared using standard recombinant techniques using the GenBank sequence as reference (NM_174936). Group 2 involved mice of the XenoMouse® strain XMG4-KL, which produce fully human $IgG4_\kappa$ and $IgG4\lambda$ antibodies. Group 2 mice were also immunized with human PCSK9.

[0401] The mice of both groups were injected with antigen eleven times, according to the schedule in Table 3. In the initial immunizations, each mouse was injected with a total of 10 μg of antigen delivered intraperitoneally into the abdomen. Subsequent boosts are 5ug doses and injection method is staggered between intraperitoneal injections into the abdomen and sub-cutaneous injections at the base of the tail. For intraperitoneal injections antigen is prepared as an emulsion with TiterMax® Gold (Sigma, Cat # T2684) and for subcutaneous injections antigen is mixed with Alum (aluminum phosphate) and CpG oligos. In injections 2 through 8 and 10, each mouse was injected with a total of 5 μg of antigen in the adjuvant alum gel. A final injection of 5 μg of antigen per mouse is delivered in Phospho buffered saline and delivered into 2 sites 50% IP into the abdomen and 50% SQ at the base of tail. The immunization programs are summarized in Table 3, shown below.

TABLE 3

mouse strain	XMG2/kl	XMG4/kl
# of animals	10	10
immunogen	PCSK9-V5/His	PCSK9-V5/His
1st boost	IP injection 10ug each	IP injection 10ug each
	Titermax Gold	Titermax Gold
2nd boost	tail injection 5ug each	tail injection 5ug each
	Alum/CpG ODN	Alum/CpG ODN
3rd boost	IP injection 5ug each	IP injection 5ug each

	Titermax Gold	Titermax Gold
4th boost	tail injection 5ug each	tail injection 5ug each
	Alum/CpG ODN	Alum/CpG ODN
5th boost	IP injection 5ug each	IP injection 5ug each
	Titermax Gold	Titermax Gold
6th boost	tail injection 5ug each	tail injection 5ug each
	Alum/CpG ODN	Alum/CpG ODN
7th boost	IP injection 5ug each	IP injection 5ug each
	Titermax Gold	Titermax Gold
8th boost	tail injection 5ug each	tail injection 5ug each
	Alum/CpG ODN	Alum/CpG ODN
bleed		
9th boost	IP injection 5ug each	IP injection 5ug each
	Titermax Gold	Titermax Gold
10th boost	tail injection 5ug each	tail injection 5ug each
	Alum/CpG ODN	Alum/CpG ODN
11th boost	BIP 5ug each	BIP 5ug each
	PBS	PBS
harvest		

[0402] The protocol used to titer the XenoMouse animals was as follows: Costar 3368 medium binding plates were coated with neutravadin @ 8ug/ml (50ul/well) and incubated at 4°C in 1XPBS/0.05% azide overnight. They were washed using TiterTek 3-cycle wash with RO water. Plates were blocked using 250ul of 1XPBS/1%milk and incubated for at least 30 minutes at RT. Block was washed off using TiterTek 3-cycle wash with RO water. One then captured b-human PCSK9 @ 2ug/ml in 1XPBS/1%milk/10mM Ca2+ (assay diluent) 50ul/well and incubated for 1hr at RT. One then washed using TiterTek 3-cycle wash with RO water. For the primary antibody, sera was titrated 1:3 in duplicate from 1:100. This was done in assay diluent 50ul/well and incubated for 1hr at RT. One then washed using TiterTek 3-cycle wash with RO water. The secondary antibody was goat anti Human IgG Fc HRP @ 400 ng/ml in assay diluent at 50ul/well. This was incubated for 1hr at RT. This was then washed using TiterTek 3-cycle wash with RO water and patted dry on paper towels. For the substrate, one-step

TMB solution (Neogen, Lexington, Kentucky) was used (50ul/well) and it was allowed to develop for 30 min at RT.

[0403] The protocols followed in the ELISA assays was as follows: For samples comprising b-PCSK9 with no V5His tag the following protocol was employed: Costar 3368 medium binding plates (Corning Life Sciences) were employed. The plates were coated with neutravadin at 8 μg/ml in 1XPBS/0.05%Azide, (50 μl/well). The plates were incubated at 4°C overnight. The plates were then washed using a Titertek M384 plate washer (Titertek, Huntsville, AL). A 3-cycle wash was perfomed. The plates were blocked with 250 μl of 1XPBS/1% milk and incubated approximately 30 minutes at room temperature. The plates were then washed using the M384 plate washer. A 3-cycle wash was perfomed. The capture was b-hu PCSK9, without a V5 tag, and was added at 2 μg/ml in 1XPBS/1%milk/10mM Ca^{2+} (40 μl/well). The plates were then incubated for 1 hour at room temperature. A 3-cycle wash was perfomed. Sera were titrated 1:3 in duplicate from 1:100, and row H was blank for sera. The titration was done in assay diluent, at a volume of 50 μl/well. The plates were incubated for 1 hour at room temperature. Next, a 3-cycle wash was perfomed. Goat anti Human IgG Fc HRP at 100 ng/ml (1:4000) in 1XPBS/1%milk/10mM Ca^{2+} (50 μl/well) was added to the plate and was incubated 1 hour at room temperature. The plates were washed once again, using a 3-cycle wash. The plates were then patted dry with paper towel. Finally, 1 step TMB (Neogen, Lexington, Kentucky) (50 μl/well) was added to the plate and was quenched with 1N hydrochloric acid (50 μl/well) after 30 minutes at room temperature. OD's were read immediately at 450 nm using a Titertek plate reader.

[0404] Positive controls to detect plate bound PCSK9 were soluble LDL receptor (R&D Systems, Cat #2148LD/CF) and a polyclonal rabbit anti-PCSK9 antibody (Caymen Chemical #10007185) titrated 1:3 in duplicate from 3 μg/ml in assay diluent. LDLR was detected with goat anti LDLR (R&D Systems, Cat #AF2148) and rabbit anti goat IgGFc HRP at a concentration of 400 ng/ml; the rabbit polyclonal was detected with goat anti-rabbit IgG Fc at a concentration of 400 ng/ml in assay diluent. Negative control was naive XMG2-KL and XMG4-KL sera titrated 1:3 in duplicate from 1:100 in assay diluent.

[0405] For samples comprising b-PCSK9 with a V5His tag the following protocol was employed: Costar 3368 medium binding plates (Corning Life Sciences) were employed. The plates were coated with neutravadin at 8 μg/ml in 1XPBS/0.05%Azide, (50 μl/well). The

plates were incubated at 4°C overnight. The plates were then washed using a Titertek M384 plate washer (Titertek, Huntsville, AL). A 3-cycle wash was perfomed. The plates were blocked with 250 µl of 1XPBS/1% milk and incubated approximately 30 minutes at room temperature. The plates were then washed using the M384 plate washer. A 3-cycle wash was perfomed. The capture was b-hu PCSK9, with a V5 tag, and was added at 2 µg/ml in 1XPBS/1%milk/10mM Ca^{2+} (40 µl/well). The plates were then incubated for 1 hour at room temperature. A 3-cycle wash was perfomed. Sera were titrated 1:3 in duplicate from 1:100, and row H was blank for sera. The titration was done in assay diluent, at a volume of 50 µl/well. The plates were incubated for 1 hour at room temperature. Next, the plates were washed using the M384 plate washer operated using a 3-cycle wash. Goat anti Human IgG Fc HRP at 400 ng/ml in 1XPBS/1%milk/10mM Ca^{2+} was added at 50 µl/well to the plate and the plate was incubated 1 hour at room temperature. The plates were washed once again, using a 3-cycle wash. The plates were then patted dry with paper towel. Finally, 1 step TMB (Neogen, Lexington, Kentucky) (50 µl/well) was added to the plate and the plate was quenched with 1N hydrochloric acid (50 µl/well) after 30 minutes at room temperature. OD's were read immediately at 450 nm using a Titertek plate reader.

[0406] Positive control was LDLR, rabbit anti-PCSK9 titrated 1:3 in duplicate from 3 µg/ml in assay diluent. LDLR detect with goat anti-LDLR (R&D Systems, Cat #AF2148) and rabbit anti-goat IgG Fc HRP at a concentration of 400 ng/ml; rabbit poly detected with goat anti-rabbit IgG Fc at a concentration of 400 ng/ml in assay diluent. Human anti-His 1.2,3 and anti-V5 1.7.1 titrated 1:3 in duplicate from 1 µg/ml in assay diluent; both detected with goat anti-human IgG Fc HRP at a concentration of 400 ng/ml in assay diluent. Negative control was naive XMG2-KL and XMG4-KL sera titrated 1:3 in duplicate from 1:100 in assay diluent.

[0407] Titers of the antibody against human PCSK9 were tested by ELISA assay for mice immunized with soluble antigen as described. Table 4 summarizes the ELISA data and indicates that there were some mice which appeared to be specific for PCSK9. *See, e.g.*, Table 4. Therefore, at the end of the immunization program, 10 mice (in bold in Table 4) were selected for harvest, and splenocytes and lymphocytes were isolated from the spleens and lymph nodes respectively, as described herein.

TABLE 4

Summary of ELISA Results

		Titer	Titer
	Animal ID	b-hu PCSK9 (V5His) @ 2ug/ml	b-hu PCSK9 @ 2ug/ml
Group 1 - IgG2k/l	P175807	>72900 @ OD 2.2	68359
	P175808	>72900 @ OD 2.3	>72900 @ OD 2.5
	P175818	>72900 @ OD 3.2	**>72900 @ OD 3.0**
	P175819	>72900 @ OD 3.4	**>72900 @ OD 3.2**
	P175820	>72900 @ OD 2.4	>72900 @ OD 2.5
	P175821	>72900 @ OD 3.4	**>72900 @ OD 3.0**
	P175830	>72900 @ OD 2.6	>72900 @ OD 2.5
	P175831	>72900 @ OD 3.1	**>72900 @ OD 3.1**
	P175832	>72900 @ OD 3.8	**>72900 @ OD 3.6**
	P175833	>72900 @ OD 2.6	>72900 @ OD 2.3
Group 2 - IgG4k/l	P174501	19369	17109
	P174503	31616	**23548**
	P174508	48472	**30996**
	P174509	23380	21628
	P174510	15120	9673
	P175773	19407	15973
	P175774	54580	**44424**
	P175775	60713	**55667**
	P175776	30871	**22899**
	P175777	16068	12532
	Naïve G2	< 100 @ OD 0.54	< 100 @ OD 0.48
	Naïve G4	< 100 @ OD 1.57	< 100 @ OD 1.32

EXAMPLE 2

Recovery of Lymphocytes, B-cell Isolations, Fusions and Generation of Hybridomas

[0408] This example outlines how the immune cells were recovered and the hybridomas were generated. Selected immunized mice were sacrificed by cervical dislocation and the draining lymph nodes were harvested and pooled from each cohort. The B cells were dissociated from lymphoid tissue by grinding in DMEM to release the cells from the tissues, and the cells were suspended in DMEM. The cells were counted, and 0.9 ml DMEM per 100 million lymphocytes was added to the cell pellet to resuspend the cells gently but completely.

[0409] Lymphocytes were mixed with nonsecretory myeloma P3X63Ag8.653 cells purchased from ATCC, cat.# CRL 1580 (Kearney *et al.*, (1979) *J. Immunol.* 123, 1548-1550) at a ratio of 1:4. The cell mixture was gently pelleted by centrifugation at 400 x g 4 min. After decanting of the supernatant, the cells were gently mixed using a 1 ml pipette. Preheated

PEG/DMSO solution from Sigma (cat# P7306) (1 ml per million of B-cells) was slowly added with gentle agitation over 1 min followed by 1 min of mixing. Preheated IDMEM (2 ml per million of B cells) (DMEM without glutamine, L-glutamine, pen/strep, MEM non-essential amino acids (all from Invitrogen), was then added over 2 minutes with gentle agitation. Finally preheated IDMEM (8 ml per 10^6 B-cells) was added over 3 minutes.

[0410] The fused cells were spun down 400 x g 6 min and resuspended in 20 ml selection media (DMEM (Invitrogen), 15 % FBS (Hyclone), supplemented with L-glutamine, pen/strep, MEM Non-essential amino acids, Sodium Pyruvate, 2-Mercaptoethanol (all from Invitrogen), HA-Azaserine Hypoxanthine and OPI (oxaloacetate, pyruvate, bovine insulin) (both from Sigma) and IL-6 (Boehringer Mannheim)) per million B-cells. Cells were incubated for 20-30 min at 37C and then resuspended in 200 ml selection media and cultured for 3-4 days in T175 flask prior to 96 well plating. Thus, hybridomas that produced antigen binding proteins to PCSK9 were produced.

EXAMPLE 3

Selection of PCSK9 Antibodies

[0411] The present example outlines how the various PCSK9 antigen binding proteins were characterized and selected. The binding of secreted antibodies (produced from the hybridomas produced in Examples 1 and 2) to PCSK9 was assessed. Selection of antibodies was based on binding data and inhibition of PCSK9 binding to LDLR and affinity. Binding to soluble PCSK9 was analyzed by ELISA, as described below. BIAcore® (surface plasmon resonance) was used to quantify binding affinity.

Primary Screen

[0412] A primary screen for antibodies which bind to wild-type PCSK9 was performed. The primary screen was performed on two harvests. The primary screen comprised an ELISA assay and was performed using the following protocol:

[0413] Costar 3702 medium binding 384 well plates (Corning Life Sciences) were employed. The plates were coated with neutravadin at a concentration of 4 µg/ml in 1XPBS/0.05%Azide, at a volume of 40 µl/well. The plates were incubated at 4°C overnight. The plates were then washed using a Titertek plate washer (Titertek, Huntsville, AL). A 3-cycle wash was perfomed. The plates were blocked with 90 µl of 1XPBS/1%milk and incubated

approximately 30 minutes at room temperature. The plates were then washed. Again, a 3-cycle wash was perfomed. The capture sample was biotinylated-PCSK9, without a V5 tag, and was added at 0.9 μg/ml in 1XPBS/1%milk/10mM Ca^{2+} at a volume of 40 μl/well. The plates were then incubated for 1 hour at room temperature. Next, the plates were washed using the Titertek plate washer operated using a 3-cycle wash. 10 μl of supernatant was transferred into 40 μl of 1XPBS/1%milk/10mM Ca^{2+} and incubated 1.5 hours at room temperature. Again the plates were washed using the Titertek plate washer operated using a 3-cycle wash. 40 μl/well of Goat anti-Human IgG Fc POD at a concentration of 100 ng/ml (1:4000) in 1XPBS/1%milk/10mM Ca^{2+} was added to the plate and was incubated 1 hour at room temperature. The plates were washed once again, using a 3-cycle wash. Finally, 40 μl/well of One-step TMB (Neogen, Lexington, Kentucky) was added to the plate and quenching with 40 μl/well of 1N hydrochloric acid was performed after 30 minutes at room temperature. OD's were read immediately at 450 nm using a Titertek plate reader.

[0414] The primary screen resulted in a total of 3104 antigen specific hybridomas being identified from the two harvests. Based on highest ELISA OD, 1500 hybridomas per harvest were advanced for a total of 3000 positives.

Confirmatory Screen

[0415] The 3000 positives were then rescreened for binding to wild-type PCSK9 to confirm stable hybridomas were established. The screen was performed as follows: Costar 3702 medium binding 384 well plates (Corning Life Sciences) were employed. The plates were coated with neutravadin at 3 μg/ml in 1XPBS/0.05%Azide at a volume of 40 μl/well. The plates were incubated at 4°C overnight. The plates were then washed using a Titertek plate washer (Titertek, Huntsville, AL). A 3-cycle wash was perfomed. The plates were blocked with 90 μl of 1XPBS/1%milk and incubated approximately 30 minutes at room temperature. The plates were then washed using the M384 plate washer. A 3-cycle wash was perfomed. The capture sample was b-PCSK9, without a V5 tag, and was added at 0.9 μg/ml in 1XPBS/1%milk/10mM Ca^{2+} at a volume of 40 μl/well. The plates were then incubated for 1 hour at room temperature. Next, the plates were washed using a 3-cycle wash. 10 μl of supernatant was transferred into 40 μl of 1XPBS/1%milk/10mM Ca^{2+} and incubated 1.5 hours at room temperature. Again the

plates were washed using the Titertek plate washer operated using a 3-cycle wash. 40 µl/well of Goat anti-Human IgG Fc POD at a concentration of 100 ng/ml (1:4000) in 1XPBS/1%milk/10mM Ca^{2+} was added to the plate, and the plate was incubated 1 hour at room temperature. The plates were washed once again, using the Titertek plate washer operated using a 3-cycle wash. Finally, 40 µl/well of One-step TMB (Neogen, Lexington, Kentucky) was added to the plate and was quenched with 40 µl/well of 1N hydrochloric acid after 30 minutes at room temperature. OD's were read immediately at 450 nm using a Titertek plate reader. A total of 2441 positives repeated in the second screen. These antibodies were then used in the subsequent screenings.

Mouse Cross-reactivity Screen

[0416] The panel of hybridomas was then screened for cross-reactivity to mouse PCSK9 to make certain that the antibodies could bind to both human and mouse PCSK9. The following protocol was employed in the cross-reactivity screen: Costar 3702 medium binding 384 well plates (Corning Life Sciences) were employed. The plates were coated with neutravadin at 3 µg/ml in 1XPBS/0.05%Azide at a volume of 40 µl/well. The plates were incubated at 4°C overnight. The plates were then washed using a Titertek plate washer (Titertek, Huntsville, AL). A 3-cycle wash was perfomed. The plates were blocked with 90 µl of 1XPBS/1%milk and incubated approximately 30 minutes at room temperature. The plates were then washed using the Titertek plate washer. A 3-cycle wash was perfomed. The capture sample was biotinylated-mouse PCSK9, and was added at 1 µg/ml in 1XPBS/1%milk/10mM Ca^{2+} at a volume of 40 µl/well. The plates were then incubated for 1 hour at room temperature. Next, the plates were washed using the Titertek plate washer operated using a 3-cycle wash. 50 µl of supernatant was transferred to the plates and incubated 1 hour at room temperature. Again the plates were washed using a 3-cycle wash. 40 µl/well of Goat anti-Human IgG Fc POD at a concentration of 100 ng/ml (1:4000) in 1XPBS/1%milk/10mM Ca^{2+} was added to the plate and the plate was incubated 1 hour at room temperature. The plates were washed once again, using a 3-cycle wash. Finally, 40 µl/well One-step TMB (Neogen, Lexington, Kentucky) was added to the plate and was quenched with 40 µl/well of 1N hydrochloric acid after 30 minutes at room temperature. OD's were read immediately at 450 nm using a Titertek plate reader. 579

antibodies were observed to cross-react with mouse PCSK9. These antibodies were then used in the subsequent screenings.

D374Y Mutant Binding Screen

[0417] The D374Y mutation in PCSK9 has been documented in the human population (*e.g.*, Timms KM et al, "A mutation in PCSK9 causing autosomal-dominant hypercholesterolemia in a Utah pedigree", Hum. Genet. 114: 349-353, 2004). In order to determine if the antibodies were specific for the wild type or also bound to the D374Y form of PCSK9, the samples were then screened for binding to the mutant PCSK9 sequence comprising the mutation D374Y. The protocol for the screen was as follows: Costar 3702 medium binding 384 well plates (Corning Life Sciences) were employed in the screen. The plates were coated with neutravadin at 4 µg/ml in 1XPBS/0.05% Azide at a volume of 40 µl/well. The plates were incubated at 4°C overnight. The plates were then washed using a Titertek plate washer (Titertek, Huntsville, AL). A 3-cycle wash was perfomed. The plates were blocked with 90 µl of 1XPBS/1%milk and incubated approximately 30 minutes at room temperature. The plates were then washed using the Titertek plate washer. A 3-cycle wash was perfomed. The plates were coated with biotinylated human PCSK9 D374Y at a concentration of 1 µg/ml in 1XPBS/1%milk/10mMCa^{2+} and incubated for 1 hour at room temperature. The plates were then washed using a Titertek plate washer. A 3-cycle wash was perfomed. Late exhaust hybridoma culture supernatant was diluted 1:5 in PBS/milk/Ca^{2+} (10 ml plus 40 ml) and incubated for 1 hour at room temperature. Next, 40 µl/well of rabbit anti-human PCSK9 (Cayman Chemical) and human anti-His 1.2.3 1:2 at 1ug/ml in 1XPBS/1%milk/10mMCa^{2+} was titrated onto the plates, which were then incubated for 1 hour at room temperature. The plates were then washed using a Titertek plate washer. A 3-cycle wash was perfomed. 40 µl/well of Goat anti-Human IgG Fc HRP at a concentration of 100 ng/ml (1:4000) in 1XPBS/1%milk/10mM Ca^{2+} was added to the plate and the plate was incubated 1 hour at room temperature. 40 µl/well of Goat anti-rabbit IgG Fc HRP at a concentration of 100 ng/ml (1:4000) in 1XPBS/1%milk/10mM Ca^{2+} was added to the plate and the plate was incubated 1 hour at room temperature. The plates were then washed using a Titertek plate washer. A 3-cycle wash was perfomed. Finally, 40 µl/well of One-step TMB (Neogen, Lexington, Kentucky) was added to the plate and was quenched with 40 µl/well of 1N hydrochloric acid after 30 minutes at room temperature. OD's were read

immediately at 450 nm using a Titertek plate reader. Over 96% of the positive hits on the wild-type PCSK9 also bound mutant PCSK9.

Large Scale Receptor Ligand Blocking Screen

[0418] To screen for the antibodies that block PCSK9 binding to LDLR an assay was developed using the D374Y PCSK9 mutant. The mutant was used for this assay because it has a higher binding affinity to LDLR allowing a more sensitive receptor ligand blocking assay to be developed. The following protocol was employed in the receptor ligand blocking screen: Costar 3702 medium binding 384 well plates (Corning Life Sciences) were employed in the screen. The plates were coated with goat anti-LDLR (R&D Cat #AF2148) at 2 μg/ml in 1XPBS/0.05%Azide at a volume of 40 μl/well. The plates were incubated at 4°C overnight. The plates were then washed using a Titertek plate washer (Titertek, Huntsville, AL). A 3-cycle wash was performed. The plates were blocked with 90 μl of 1XPBS/1% milk and incubated approximately 30 minutes at room temperature. The plates were then washed using the Titertek plate washer. A 3-cycle wash was performed. The capture sample was LDLR (R&D, Cat #2148LD/CF), and was added at 0.4 μg/ml in 1XPBS/1%milk/10mM Ca^{2+} at a volume of 40 μl/well. The plates were then incubated for 1 hour and 10 minutes at room temperature. Contemporaneously, 20 ng/ml of biotinylated human D374Y PCSK9 was incubated with 15 microliters of hybridoma exhaust supernatant in Nunc polypropylene plates and the exhaust supernatant concentration was diluted 1:5. The plates were then pre-incubated for about 1 hour and 30 minutes at room temperature. Next, the plates were washed using the Titertek plate washer operated using a 3-cycle wash. 50 μl/well of the pre-incubated mixture was transferred onto the LDLR coated ELISA plates and incubated for 1 hour at room temperature. To detect LDLR-bound b-PCSK9, 40 μl/well streptavidin HRP at 500 ng/ml in assay diluent was added to the plates. The plates were incubated for 1 hour at room temperature. The plates were again washed using a Titertek plate washer. A 3-cycle wash was performed. Finally, 40 μl/well of One-step TMB (Neogen, Lexington, Kentucky) was added to the plate and was quenched with 40 μl/well of 1N hydrochloric acid after 30 minutes at room temperature. OD's were read immediately at 450 nm using a Titertek plate reader. The screen identified 384 antibodies that blocked the interaction between PCSK9 and the LDLR well, 100 antibodies blocked the interaction strongly (OD < 0.3).

These antibodies inhibited the binding interaction of PCSK9 and LDLR greater than 90% (greater than 90% inhibition).

Receptor Ligand Binding Assay on Blocker Subset

[0419] The receptor ligand assay was then repeated using the mutant enzyme on the 384 member subset of neutralizers identified in the first large scale receptor ligand inhibition assay. The same protocol was employed in the screen of the 384 member blocker subset assay as was done in the large scale receptor ligand blocking screen. This repeat screen confirmed the initial screening data.

[0420] This screen of the 384 member subset identified 85 antibodies that blocked interaction between the PCSK9 mutant enzyme and the LDLR greater than 90%.

Receptor Ligand Binding Assay of Blockers that Bind the Wild Type PCSK9 but not the D374Y Mutant

[0421] In the initial panel of 3000 sups there were 86 antibodies shown to specifically bind to the wild-type PCSK9 and not to the huPCSK9(D374Y) mutant. These 86 sups were tested for the ability to block wild-type PCSK9 binding to the LDLR receptor. The following protocol was employed: Costar 3702 medium binding 384 well plates (Corning Life Sciences) were employed in the screen. The plates were coated with anti-His 1.2.3 at 10 µg/ml in 1XPBS/0.05% Azide at a volume of 40 µl/well. The plates were incubated at 4°C overnight. The plates were then washed using a Titertek plate washer (Titertek, Huntsville, AL). A 3-cycle wash was perfomed. The plates were blocked with 90 µl of 1XPBS/1%milk and incubated approximately 30 minutes at room temperature. The plates were then washed using the Titertek plate washer. A 3-cycle wash was perfomed. LDLR (R&D Systems, #2148LD/CF or R&D Systems, #2148LD) was added at 5 µg/ml in 1XPBS/1%milk/10mM Ca^{2+} at a volume of 40 µl/well. The plates were then incubated for 1 hour at room temperature. Next, the plates were washed using the Titertek plate washer operated using a 3-cycle wash. Contemporaneously, biotinylated human wild-type PCSK9 was pre-incubated with hybridoma exhaust supernatant in Nunc polypropylene plates. 22 µl of hybridoma sup was transferred into 33ul of b-PCSK9 at a concentration of 583 ng/ml in 1XPBS/1%milk/10mMCa2+, giving a final b-PCSK9 concentration = 350 ng/ml and the exhaust supernatant at a final dilution of 1:2.5. The plates

were pre-incubated for approximately 1 hour and 30 minutes at room temperature. 50 µl/well of the preincubated mixture was transferred onto LDLR captured ELISA plates and incubated for 1 hour at room temperature. The plates were then washed using the Titertek plate washer. A 3-cycle wash was perfomed. 40 µl/well streptavidin HRP at 500 ng/ml in assay diluent was added to the plates. The plates were incubated for 1 hour at room temperature. The plates were then washed using a Titertek plate washer. A 3-cycle wash was perfomed. Finally, 40 µl/well of One-step TMB (Neogen, Lexington, Kentucky) was added to the plate and was quenched with 40 µl/well of 1N hydrochloric acid after 30 minutes at room temperature. OD's were read immediately at 450 nm using a Titertek plate reader.

Screening Results

[0422] Based on the results of the assays described, several hybridoma lines were identified as producing antibodies with desired interactions with PCSK9. Limiting dilution was used to isolate a manageable number of clones from each line. The clones were designated by hybridoma line number (e.g. 21B12) and clone number (e.g. 21B12.1). In general, no difference among the different clones of a particular line were detected by the functional assays described herein. In a few cases, clones were identified from a particular line that behaved differently in the functional assays, for example, 25A7.1 was found not to block PCSK9/LDLR but 25A7.3 (referred to herein as 25A7) was neutralizing. The isolated clones were each expanded in 50-100 ml of hybridoma media and allowed to grow to exhaustion, (i.e., less than about 10% cell viability). The concentration and potency of the antibodies to PCSK9 in the supernatants of those cultures were determined by ELISA and by *in vitro* functional testing, as described herein. As a result of the screening described herein, the hybridomas with the highest titer of antibodies to PCSK9 were identified. The selected hybridomas are shown in FIGS 2A-3D and Table 2.

EXAMPLE 4.1

Production of Human 31H4 IgG4 Antibodies from Hybridomas

[0423] This example generally describes how one of the antigen binding proteins was produced from a hybridoma line. The production work used 50ml exhaust supernatant generation followed by protein A purification. Integra production was for scale up and was performed later. Hybridoma line 31H4 was grown in T75 flasks in 20 ml of media (Integra

Media, Table 5). When the hybridoma was nearly confluent in the T75 flasks, it was transferred to an Integra flask (Integra Biosciences, Integra CL1000, cat# 90 005).

[0424] The Integra flask is a cell culture flask that is divided by a membrane into two chambers, a small chamber and a large chamber. A volume of 20-30 ml hybridoma cells at a minimum cell density of $1x10^6$ cells per ml from the 31H4 hybridoma line was placed into the small chamber of an Integra flask in Integra media (see Table 5 for components of Integra media). Integra media alone (1L) was placed in the large chambers of the Integra flasks. The membrane separating the two chambers is permeable to small molecular weight nutrients but is impermeable to hybridoma cells and to antibodies produced by those cells. Thus, the hybridoma cells and the antibodies produced by those hybridoma cells were retained in the small chamber.

[0425] After one week, media was removed from both chambers of the Integra flask and was replaced with fresh Integra media. The collected media from the small chambers was separately retained. After a second week of growth, the media from the small chamber was again collected. The collected media from week 1 from the hybridoma line was combined with the collected media from week 2 from the hybridoma line. The resulting collected media sample from the hybridoma line was spun to remove cells and debris (15 minutes at 3000rpm) and the resulting supernatant was filtered (0.22um). Clarified conditioned media was loaded onto a Protein A-Sepharose column. Optionally, the media can be first concentrated and then loaded onto a Protein A Sepharose column. Non-specific bindings were removed by an extensive PBS wash. Bound antibody proteins on the Protein A column were recovered by standard acidic antibody elution from Protein A columns (such as 50 mM Citrate, pH 3.0). Aggregated antibody proteins in the Protein A Sepharose pool were removed by size exclusion chromatography or binding ion exchange chromatography on anion exchanger resin such as Q Sepharose resin. The specific IEX conditions for the 31H4 proteins are Q-Sepharose HP at pH 7.8-8.0. Antibody was eluted with a NaCl gradient of 10 mM-500 mM in 25 column volumes.

TABLE 5

Composition of Media

INTEGRA MEDIA
HSFM
10% Ultra Low IgG serum
2mmol/L L-glutamine

1% NEAA
4g/L glucose

EXAMPLE 4.2

Production of Recombinant 31H4 Human IgG2 Antibodies From Transfected Cells

[0426] The present example outlines how 31H4 IgG2 antibodies were produced from transfected cells. 293 cells for transient expression and CHO cells for stable expression were transfected with plasmids that encode 31H4 heavy and light chains. Conditioned media from transfected cells was recovered by removing cells and cell debris. Clarified conditioned media was loaded onto a Protein A-Sepharose column. Optionally, the media can first be concentrated and then loaded onto a Protein A Sepharose column. Non-specific bindings were removed by extensive PBS wash. Bound antibody proteins on the Protein A column were recovered by standard acidic antibody elution from Protein A columns (such as 50 mM citrate, pH 3.0). Aggregated antibody proteins in the Protein A Sepharose pool were removed by size exclusion chromatography or binding ion exchange chromatography on anion exchanger resin such as Q Sepharose resin. The specific IEX conditions for the 31H4 proteins are Q-Sepharose HP at pH 7.8-8.0. The antibody was eluted with a NaCl gradient of 10 mM-500 mM in 25 column volumes.

EXAMPLE 5

Production of Human 21B12 IgG4 Antibodies from Hybridomas

[0427] The present example outlines how antibody 21B12 IgG4 was produced from hybridomas. Hybridoma line 21B12 was grown in T75 flasks in media (Integra Media, Table 5). When the hybridomas were nearly confluent in the T75 flasks, they were transferred to Integra flasks (Integra Biosciences, Integra CL1000, cat# 90 005).

[0428] The Integra flask is a cell culture flask that is divided by a membrane into two chambers, a small chamber and a large chamber. A volume of 20-30 ml hybridoma cells at a minimum cell density of $1x10^6$ cells per ml from the 31H4 hybridoma line was placed into the small chamber of an Integra flask in Integra media (see Table 5 for components of Integra media). Integra media alone (1L) was placed in the large chambers of the Integra flasks. The membrane separating the two chambers is permeable to small molecular weight nutrients but is

impermeable to hybridoma cells and to antibodies produced by those cells. Thus, the hybridoma cells and the antibodies produced by those hybridoma cells were retained in the small chamber. After one week, media was removed from both chambers of the Integra flask and was replaced with fresh Integra media. The collected media from the small chambers was separately retained. After a second week of growth, the media from the small chamber was again collected. The collected media from week 1 from the hybridoma line was combined with the collected media from week 2 from the hybridoma line. The resulting collected media sample from the hybridoma line was spun to remove cells and debris (15 minutes at 3000 rpm) and the resulting supernatant was filtered (0.22 μm). Clarified conditioned media were loaded onto a Protein A Sepharose column. Optionally, the media are first concentrated and then loaded onto a Protein A Sepharose column. Non-specific bindings were removed by an extensive PBS wash. Bound antibody proteins on the Protein A column were recovered by standard acidic antibody elution from Protein A columns (such as 50 mM Citrate, pH 3.0). Aggregated antibody proteins in the Protein A Sepharose pool were removed by size exclusion chromatography or binding ion exchange chromatography on anion exchanger resin such as Q Sepharose resin. The specific IEX conditions for the 21B12 proteins are Q-Sepharose HP at pH 7.8-8.0. The antibody was eluted with a NaCl gradient of 10 mM-500 mM in 25 column volumes.

EXAMPLE 6

Production of Human 21B12 IgG2 Antibodies From Transfected Cells

[0429] The present example outlines how 21B12 IgG2 antibodies were produced from transfected cells. Cells (293 cells for transient expression and CHO cells for stable expression) were transfected with plasmids that encode 21B12 heavy and light chains. Conditioned media from hybridoma cells were recovered by removing cells and cell debris. Clarified conditioned media were loaded onto a Protein A-Sepharose column. Optionally, the media can first be concentrated and then loaded onto a Protein A Sepharose column. Non-specific bindings were removed by extensive PBS wash. Bound antibody proteins on the Protein A column were recovered by standard acidic antibody elution from Protein A columns (50 mM Citrate, pH 3.0). Aggregated antibody proteins in the Protein A Sepharose pool were removed by size exclusion chromatography or binding ion exchange chromatography on cation exchanger

resin such as SP-Sepharose resin. The specific IEX conditions for the 21B12 proteins were SP-Sepharose HP at pH 5.2. Antibodies were eluted with 25 column volumes of buffer that contains a NaCl gradient of 10 mM-500 mM in 20 mM sodium acetate buffer.

EXAMPLE 7

Production of Human 16F12 IgG4 Antibodies from Hybridomas

[0430] The present example outlines how antibody 16F12 IgG4 was produced from hybridomas. Hybridoma line 16F12 was grown in T75 flasks in media (see Table 5). When the hybridomas were nearly confluent in the T75 flasks, they were transferred to Integra flasks (Integra Biosciences, Integra CL1000, cat# 90 005).

[0431] The Integra flask is a cell culture flask that is divided by a membrane into two chambers, a small chamber and a large chamber. A volume of 20-30 ml Hybridoma cells at a minimum cell density of $1x10^6$ cells per ml from the 31H4 hybridoma line was placed into the small chamber of an Integra flask in Integra media (see Table 5 for components of Integra media). Integra media alone (1L) was placed in the large chambers of the Integra flasks. The membrane separating the two chambers is permeable to small molecular weight nutrients but is impermeable to hybridoma cells and to antibodies produced by those cells. Thus, the hybridoma cells and the antibodies produced by those hybridoma cells were retained in the small chamber.

[0432] After one week, media was removed from both chambers of the Integra flask and was replaced with fresh Integra media. The collected media from the small chambers was separately retained. After a second week of growth, the media from the small chamber was again collected. The collected media from week 1 from the hybridoma line was combined with the collected media from week 2 from the hybridoma line. The resulting collected media sample from the hybridoma line were spun to remove cells and debris (15 minutes at 3000 rpm) and the resulting supernatants were filtered (0.22 μm). Clarified conditioned media were loaded onto a Protein A Sepharose column. Optionally, the media can be first concentrated and then loaded onto a Protein A Sepharose column. Non-specific bindings were removed by extensive PBS wash. Bound antibody proteins on the Protein A column were recovered by standard acidic antibody elution from Protein A columns (50 mM Citrate, pH 3.0). Aggregated antibody proteins in the Protein A Sepharose pool were removed by size exclusion chromatography or binding ion exchange chromatography on anion exchanger resin such as Q Sepharose resin. The

specific IEX conditions for the 16F12 proteins are Q Sepharose HP at pH 7.8-8.0. Antibody was eluted with a NaCl gradient of 10 mM-500 mM in 25 column volumes.

EXAMPLE 8

Production of Human 16F12 IgG2 Antibodies From Transfected Cells

[0433] The present example outlines how 16F12 IgG2 antibodies were produced from transfected cells. Cells (293 cells for transient expression and CHO cells for stable expression) were transfected with plasmids that encode 16F12 heavy and light chains. Conditioned media from hybridoma cells were recovered by removing cells and cell debris. Clarified conditioned media were loaded onto a Protein A-Sepharose. Optionally, the media can be first concentrated and then loaded onto a Protein A Sepharose column. Non-specific bindings were removed by extensive PBS wash. Bound antibody proteins on the Protein A column were recovered by standard acidic antibody elution from Protein A columns (50 mM Citrate, pH 3.0). Aggregated antibody proteins in the Protein A Sepharose pool were removed by size exclusion chromatography or binding ion exchange chromatography on cation exchanger resin such as SP Sepharose resin. The specific IEX conditions for the 16F12 proteins are SP Sepharose HP at pH 5.2. Antibody is eluted with 25 column volumes of buffer that contains a NaCl gradient of 10 mM-500 mM in 20 mM sodium acetate buffer.

EXAMPLE 9

Sequence Analysis of Antibody Heavy and Light Chains

[0434] The nucleic acid and amino acid sequences for the light and heavy chains of the above antibodies were then deteremined by Sanger (dideoxy) nucleotide sequencing. Amino acid sequences were then deduced for the nucleic acid sequences. The nucleic acid sequences for the variable domains are depicted in FIG.s 3E-3JJ.

[0435] The cDNA sequences for the lambda light chain variable regions of 31H4, 21B12, and 16F12 were determined and are disclosed as SEQ ID NOs: 153, 95, and 105 respectively.

[0436] The cDNA sequences for the heavy chain variable regions of 31H4, 21B12, and 16F12 were determined and are disclosed as SEQ ID NOs: 152, 94, and 104 respectively.

[0437] The lambda light chain constant region (SEQ ID NO: 156), and the IgG2 and IgG4 heavy chain constant regions (SEQ ID NOs: 154 and 155) are shown in FIG. 3KK.

[0438] The polypeptide sequences predicted from each of those cDNA sequences were determined. The predicted polypeptide sequences for the lambda light chain variable regions of 31H4, 21B12, and 16F12 were predicted and are disclosed as SEQ ID NOs: 12, 23, and 35 respectively, the lambda light chain constant region (SEQ ID NO: 156), the heavy chain variable regions of 31H4, 21B12, and 16F12 were predicted and are disclosed as (SEQ. ID NOs. 67, 49, and 79 respectively. The IgG2 and IgG4 heavy chain constant regions (SEQ ID NOs: 154 and 155).

[0439] The FR1, CDR1, FR2, CDR2, FR3, CDR3, FR4 divisions are shown in FIG 2A-3D.

[0440] Based on the sequence data, the germline genes from which each heavy chain or light chain variable region was derived was determined. The identity of the germline genes are indicated next to the corresponding hybridoma line in FIGs. 2A-3D and each is represented by a unique SEQ ID NO. FIGs. 2A-3D also depict the determined amino acid sequences for additional antibodies that were characterized.

EXAMPLE 8

Determination of Isoelectric Points of Three Antibodies

[0441] The theoretical pIs of the antibodies based on amino acid sequence were determined to be 7.36 for 16F12; 8.47 for 21B12; and 6.84 for 31H4.

EXAMPLE 9

Characterization of Binding of Antibodies to PCSK9

[0442] Having identified a number of antibodies that bind to PCSK9, several approaches were employed to quantify and further characterize the nature of the binding. In one aspect of the study, a Biacore affinity analysis was performed. In another aspect of the study a KinExA® affinity analysis was performed. The samples and buffers employed in these studies are presented in Table 6 below.

TABLE 6

sample	[sample] mg/ml	Buffer	[sample] uM
hPCSK9	1.26	PBS	16.6
mPCSK9-8xHIS	1.44	PBS	18.9
cPCSK9-V5-6xHIS	0.22	PBS	2.9
16F12, anti-PCSK9 huIgG4	4.6	20mM NaOAC, pH 5.2, 50mM NaCl	31.9
21B12, anti-PCSK9 huIgG4	3.84	10mM NAOAC, pH 5.2, 9% Sucrose	27.0
31H4, anti-PCSK9 huIgG4	3.3	10mM NAOAC, pH 5.2, 9% Sucrose	22.9

BIAcore® Affinity Measurements

[0443] A BIAcore® (surface plasmon resonance device, Biacore, Inc., Piscataway, NJ) affinity analysis of the 21B12 antibodies to PCSK9 described in this Example was performed according to the manufacturer's instructions.

[0444] Briefly, the surface plasmon resonance experiments were performed using Biacore 2000 optical biosensors (Biacore, GE Healthcare, Piscataway, NJ). Each individual anti-PCSK9 antibody was immobilized to a research-grade CM5 biosensor chip by amine-coupling at levels that gave a maximum analyte binding response (Rmax) of no more than 200 resonance units (RU). The concentration of PCSK9 protein was varied at 2 fold intervals (the analyte) and was injected over the immobilized antibody surface (at a flow rate of 100 µl/min for 1.5 minutes). Fresh HBS-P buffer (pH 7.4, 0.01 M Hepes, 0.15 M NaCl, 0.005% surfactant P-20, Biacore) supplemented with 0.01% BSA was used as binding buffer. Binding affinities of each anti-PCSK9 antibody were measured in separate experiments against each of the human, mouse, and cynomolgus monkey PCSK9 proteins at pH 7.4 (the concentrations used were 100, 50, 25, 12.5, 6.25, 3.125, and 0 nM).

[0445] In addition, the binding affinities of antibody to human PCSK9 were also measured at pH 6.0 with the pH 6.0 HBS-P buffer (pH 6.0, 0.01 M Hepes, 0.15 M NaCl, 0.005% surfactant P-20, Biacore) supplemented with 0.01% BSA. The binding signal obtained was

proportional to the free PCSK9 in solution. The dissociation equilibrium constant (K_D) was obtained from nonlinear regression analysis of the competition curves using a dual-curve one-site homogeneous binding model (KinExA® software, Sapidyne Instruments Inc., Boise, ID) (n=1 for the 6.0 pH runs). Interestingly, the antibodies appeared to display a tighter binding affinity at the lower pH (where the Kd was 12.5, 7.3, and 29 pM for 31H4, 21B12, and 16F12 respectively).

[0446] Antibody binding kinetic parameters including k_a (association rate constant), k_d (dissociation rate constant), and K_D (dissociation equilibrium constant) were determined using the BIA evaluation 3.1 computer program (BIAcore, Inc. Piscataway, NJ). Lower dissociation equilibrium constants indicate greater affinity of the antibody for PCSK9. The K_D values determined by the BIAcore® affinity analysis are presented in Table 7.1, shown below.

TABLE 7.1

Antibody	hPCSK9	CynoPCSK9	mPCSK9
31H4	210 pM	190 pM	6 nM
21B12	190 pM	360 pM	460 nM
16F12	470 pM	870 pM	6.4 nM

Table 7.2 depicts the k_{on} and k_{off} rates.

TABLE 7.2

	K_{on} (M-1 s-1)	K_{off} (s-1)	K_D
31H4.1, pH 7.4	2.45 e+5	5.348 e-5	210 pM
31H4.1, pH 6	5.536 e+6	6.936 e-5	12.5 pM
21B12.1, pH 7.4	3.4918 e+4	6.634 e-6	190 pM
21B12.1, pH 6	2.291 e+6	1.676 e-5	7.3 pM
16F12.1, pH 7.4	1.064 e+5	4.983 e-5	470 pM
16F12.1, pH 6	2.392 e+6	7.007 e-5	29 pM

KinExA® Affinity Measurements

[0447] A KinExA® (Sapidyne Instruments, Inc., Boise, ID) affinity analysis of 16F12 and 31H4 was performed according to the manufacturer's instructions. Briefly, Reacti-Gel™ (6x) (Pierce) was pre-coated with one of human, V5-tagged cyno or His-tagged mouse PCSK9 proteins and blocked with BSA. 10 or 100 pM of either antibody 16F12 or antibody 31H4 and one of the PCSK9 proteins was then incubated with various concentrations (0.1 pM – 25 nM) of PCSK9 proteins at room temperature for 8 hours before being passed through the PCSK9-coated beads. The amount of the bead-bound 16F12 or 31H4 was quantified by fluorescently (Cy5) labeled goat anti-human IgG (H+L) antibody (Jackson Immuno Research). The binding signal is proportional to the concentration of free 16F12 or 31H4 at binding equilibrium. Equilibrium dissociation constant (K_D) were obtained from nonlinear regression of the two sets of competition curves using a one-site homogeneous binding model. The KinExA® Pro software was employed in the analysis. Binding curves generated in this analysis are presented as FIGs. 4A-4F.

[0448] Both the 16F12 and 31H4 antibodies showed similar affinity to human and cyno PCSK9, but approximately 10-250 fold lower affinity to mouse PCSK9. Of the two antibodies tested using the KinExA® system, antibody 31H4 showed higher affinity to both human and cyno PCSK9 with 3 and 2 pM K_D, respectively. 16F12 showed slightly weaker affinity at 15pM K_D to human PCSK9 and 16 pM K_D to cyno PCSK9.

[0449] The results of the KinExA® affinity analysis are summarized in Table 8.1, shown below.

TABLE 8.1

	hPCSK9		cPCSK		mPCSK	
Sample	**KD (pM)**	95% CI	**KD (pM)**	95% CI	**KD (pM)**	95% CI
16F12	**15**	11 ~22	**16**	14~19	**223**	106~410
31H4.1	**3**	1~5	**2**	1~3	**500**	400~620

[0450] In addition, a SDS PAGE was run to check the quality and quantity of the samples and is shown in FIG. 5A. cPCSK9 showed around 50% less on the gel and also from the active binding concentration calculated from KinExA® assay. Therefore, the K_D of the mAbs to cPCSK9 was adjusted as 50% of the active cPCSK9 in the present.

[0451] A BIAcore solution equilibirium binding assay was used to measure the Kd values for ABP 21B12. 21B12.1 showed little signal using KinExA assay, therefore, biacore solution equilibrium assay was applied. Since no significant binding was observed on binding of antibodies to immobilized PCSK9 surface, 21B12 antibody was immobilized on the flow cell 4 of a CM5 chip using amine coupling with density around 7000 RU. Flow cell 3 was used as a background control. 0.3, 1, and 3 nM of human PCSK9 or cyno PCSK9 were mixed with a serial dilutions of 21B12.1 antibody samples (ranged from 0.001 ~ 25 nM) in PBS plus 0.1mg/ml BSA, 0.005% P20. Binding of the free PCSK9 in the mixed solutions were measured by injecting over the 21B12.1 antibody surface. 100% PCSK9 binding signal on 21B12.1 surface was determined in the absence of mAb in the solution. A decreased PCSK9 binding response with increasing concentrations of mAb indicated that PCSK9 binding to mAb in solution, which blocked PCSK9 from binding to the immobilized peptibody surface. Plotting the PCSK9 binding signal versus mAb concentrations, K_D was calculated from three sets of curves (0.3, 1 and 3nM fixed PCSK9 concentration) using a one-site homogeneous binding model in KinExA Pro™ software. Although cPCSK9 has lower protein concentration observed from KinExA assay and SDS-gel, its concentration was not adjusted here since the concentration of cPCSK9 was not used for calculation of K_D. The results are displayed in Table 8.2 below and in FIGs. 5B-5D. FIG. 5B depicts the results from the solution equilibrium assay at three different hPCSK9 concentrations for hPCSK9. FIG. 5C depicts a similar set of results for mPCSK9. FIG. 5D depicts the results from the above biacore capture assay.

TABLE 8.2

	hPCSK9		cPCSK		mPCSK	
Sample	KD (pM)	95% CI	KD (pM)	95% CI	KD (pM)	95% CI
21B12.1	15	9~23	11	7~16	17000	-

EXAMPLE 10

Epitope Binning

[0452] Competition ELISA was used for anti-PCSK9 antibody binning. Briefly, to determine if two antibodies belong to the same epitope bin, one of the antibodies (mAb1) was first coated onto an ELISA plate (NUNC) at 2 μg/ml by overnight incubation. The plate was

then washed and blocked with 3% BSA. Meanwhile, 30 ng/ml of biotinylated hPCSK9 was incubated with the second antibody (mAb2) for 2 hours at room temperature. The mixture was applied to coated mAb1 and incubated for 1 hour at room temperature. The ELISA plate was then washed and incubated with Neutravidin-HRP (Pierce) at 1:5000 dilutions for 1 hour. After another wash, the plate was incubated with TMB substrate and signal was detected at 650 nm using a Titertek plate reader. Antibodies with the same binding profiles were grouped together into the same epitope bin. The results of the antibody binning studies are presented in Table 8.3.

TABLE 8.3

Clone	Bin
21B12.2	1
31H4	3
20D10	1
25A7.1	2
25A7.3	1
23G1	1
26H5	1
31D1	1
16F12	3
28D6	3
27A6	3
31G11	3
27B2	ND
28B12	3
22E2	3
1A12.2	1
3B6	1
3C4	4
9C9	1
9H6	1
13B5	6
13H1	7
17C2	1
19H9.2	1
23B5	1
25G4	1
26E10	1
27E7	1
27H5	1
30A4	1
30B9	1

Clone	Bin
31A4	5
31B12	5

[0453] Additional examination of the epitope binning was performed using BIAcore. Three mAbs, 16F12, 21B12 and 31H4, were immobilized on flow cells 2, 3 and 4 with density around 8000 RU. 5 nM PCSK9 from human, mouse and cyno were injected over the mAb surfaces to reach around 100 to 500 RU. 10nM mAbs were then injected over the PCSK9 surface. Binding of three mAbs to three different PCSK9 proteins over the three mAbs were then recorded.

[0454] If the two mAbs had a similar epitope on the antigen, mAb 1 will not show the binding to the antigen already bound to the mAb 2. If the two mAbs have the different epitope on the antigen, mAb1 will show the binding to the antigen bound to the mAb2. FIG. 5E depicts these epitope binning results in graph form for three mAbs on human PCSk9. A similar pattern was observed for mPCSK9 and cPCSK9. As shown in the graph, 16F12 and 31H4 appear to share a similar epitope, while 21B12 appears to have a different epitope.

EXAMPLE 11

Efficacy of 31H4 and 21B12 for Blocking D374Y PCSK9/LDLR Binding

[0455] This example provides the IC50 values for two of the antibodies in blocking PCSK9 D374Y's ability to bind to LDLR. Clear 384 well plates (Costar) were coated with 2 micrograms/ml of goat anti-LDL receptor antibody (R&D Systems) diluted in buffer A (100 mM sodium cacodylate, pH 7.4). Plates were washed thoroughly with buffer A and then blocked for 2 hours with buffer B (1% milk in buffer A). After washing, plates were incubated for 1.5 hours with 0.4 micrograms/ml of LDL receptor (R&D Systems) diluted in buffer C (buffer B supplemented with 10 mM CaCl2). Concurrent with this incubation, 20 ng/ml of biotinylated D374Y PCSK9 was incubated with various concentrations of the 31H4 IgG2, 31H4 IgG4, 21B12 IgG2 or 21B12 IgG4 antibody, which was diluted in buffer A, or buffer A alone (control). The LDL receptor containing plates were washed and the biotinylated D374Y PCSK9/antibody mixture was transferred to them and incubated for 1 hour at room temperature. Binding of the biotinylated D374Y to the LDL receptor was detected by incubation with streptavidin-HRP (Biosource) at 500 ng/ml in buffer C followed by TMB substrate (KPL). The signal was quenched with 1N HCl and the absorbance read at 450 nm.

[0456] The results of this binding study are shown in FIGs. 6A-6D. Summarily, IC_{50} values were determined for each antibody and found to be 199 pM for 31H4 IgG2 (FIG. 6A), 156 pM for 31H4 IgG4 (FIG. 6B), 170 pM for 21B12 IgG2 (FIG. 6C), and 169 pM for 21B12 IgG4 (FIG. 6D).

[0457] The antibodies also blocked the binding of wild-type PCSK9 to the LDLR in this assay.

EXAMPLE 12

Cell LDL Uptake Assay

[0458] This example demonstrates the ability of various antigen binding proteins to reduce LDL uptake by cells. Human HepG2 cells were seeded in black, clear bottom 96-well plates (Costar) at a concentration of $5x10^5$ cells per well in DMEM medium (Mediatech, Inc) supplemented with 10% FBS and incubated at 37°C (5% CO2) overnight. To form the PCSK9 and antibody complex, 2 μg/ml of D374Y human PCSK9 was incubated with various concentrations of antibody diluted in uptake buffer (DMEM with 1% FBS) or uptake buffer alone (control) for 1 hour at room temperature. After washing the cells with PBS, the D374Y PCSK9/antibody mixture was transferred to the cells, followed by LDL-BODIPY (Invitrogen) diluted in uptake buffer at a final concentration of 6 μg/ml. After incubation for 3 hours at 37°C (5% CO2), cells were washed thoroughly with PBS and the cell fluorescence signal was detected by Safire™ (TECAN) at 480-520nm (excitation) and 520-600nm (emission).

[0459] The results of the cellular uptake assay are shown in FIGs. 7A-7D. Summarily, IC_{50} values were determined for each antibody and found to be 16.7 nM for 31H4 IgG2 (FIG. 7A), 13.3 nM for 31H4 IgG4 (FIG. 7B), 13.3 nM for 21B12 IgG2 (FIG. 7C), and 18 nM for 21B12 IgG4 (FIG. 7D). These results demonstrate that the applied antigen binding proteins can reduce the effect of PCSK9 (D374Y) to block LDL updtake by cells The antibodies also blocked the effect of wild-type PCSK9 in this assay.

EXAMPLE 13

Serum cholesterol Lowering Effect of the 31H4 Antibody in 6 Day Study

[0460] In order to assess total serum cholesterol (TC) lowering in wild type (WT) mice via antibody therapy against PCSK9 protein, the following procedure was performed.

[0461] Male WT mice (C57BL/6 strain, aged 9-10 weeks, 17-27 g) obtained from Jackson Laboratory (Bar Harbor, ME) were fed a normal chow (Harland-Teklad, Diet 2918) through out the duration of the experiment. Mice were administered either anti-PCSK9 antibody 31H4 (2 mg/ml in PBS) or control IgG (2 mg/ml in PBS) at a level of 10mg/kg through the mouse's tail vein at T=0. Naïve mice were also set aside as a naïve control group. Dosing groups and time of sacrifice are shown in Table 9.

TABLE 9

Group	Treatment	Time point after dosing	Number
1	IgG	8 hr	7
2	31H4	8 hr	7
3	IgG	24 hr	7
4	31H4	24 hr	7
5	IgG	72 hr	7
6	31H4	72 hr	7
7	IgG	144 hr	7
8	31H4	144 hr	7
9	Naïve	n/a	7

[0462] Mice were sacrificed with CO2 asphyxiation at the pre-determined time points shown in Table 9. Blood was collected via vena cava into eppendorf tubes and was allowed to clot at room temperature for 30 minutes. The samples were then spun down in a table top centrifuge at 12,000xg for 10 minutes to separate the serum. Serum total cholesterol and HDL-C were measured using Hitachi 912 clinical analyzer and Roche/Hitachi TC and HDL-C kits.

[0463] The results of the experiment are shown in FIGs. 8A-8D. Summarily, mice to which antibody 31H4 was administered showed decreased serum cholesterol levels over the course of the experiment (FIG. 8A and FIG. 8B). In addition, it is noted that the mice also showed decreased HDL levels (FIG. 8C and FIG. 8D). For FIG. 8A and FIG. 8C, the percentage change is in relation to the control IgG at the same time point (*P<0.01, # P<0.05). For FIG. 8B and FIG 8D, the percentage change is in relation to total serum cholesterol and HDL levels measured in naïve animals at t=0 hrs (*P<0.01, # P<0.05).

[0464] In respect to the lowered HDL levels, it is noted that one of skill in the art will appreciate that the decrease in HDL in mice is not indicative that an HDL decrease will occur in humans and merely further reflects that the serum cholesterol level in the organism has decreased. It is noted that mice transport the majority of serum cholesterol in high density lipoprotein (HDL) particles which is different to humans who carry most serum cholesterol on LDL particles. In mice the measurement of total serum cholesterol most closely resembles the level of serum HDL-C. Mouse HDL contains apolipoprotein E (apoE) which is a ligand for the LDL receptor (LDLR) and allows it to be cleared by the LDLR. Thus, examining HDL is an appropriate indicator for the present example, in mice (with the understanding that a decrease in HDL is not expected for humans). For example, human HDL, in contrast, does not contain apoE and is not a ligand for the LDLR. As PCSK9 antibodies increase LDLR expression in mouse, the liver can clear more HDL and therefore lowers serum HDL-C levels.

EXAMPLE 14

Effect of Antibody 31H4 on LDLR Levels in a 6 Day Study

[0465] The present example demonstrates that an antigen binding protein alters the level of LDLR in a subject, as predicted, over time. A Western blot analysis was performed in order to ascertain the effect of antibody 31H4 on LDLR levels. 50-100 mg of liver tissue obtained from the sacrified mice described in Example 13 was homogenized in 0.3 ml of RIPA buffer (Santa Cruz Biotechnology Inc.) containing complete protease inhibitor (Roche). The homogenate was incubated on ice for 30 minutes and centrifuged to pellet cellular debris. Protein concentration in the supernatant was measured using BioRad protein assay reagents (BioRad laboratories). 100µg of protein was denatured at 70°C for 10 minutes and separated on 4-12% Bis-Tris SDS gradient gel (Invitrogen). Proteins were transferred to a 0.45 µm PVDF membrane (Invitrogen) and blocked in washing buffer (50mM Tris PH7.5, 150mM NaCL, 2mM $CaCl_2$ and 0.05% Tween 20) containing 5% non-fat milk for 1 hour at room temperature. The blot was then probed with goat anti-mouse LDLR antibody (R&D system) 1:2000 or anti-ß actin (sigma) 1:2000 for 1 hour at room temperature. The blot was washed briefly and incubated with bovine anti-goat IgG-HRP (Santa Cruz Biotechnology Inc.) 1:2000 or goat anti-mouse IgG-HRP (Upstate) 1:2000. After a 1 hour incubation at room temperature, the blot was washed thoroughly and immunoreactive bands were detected using ECL plus kit (Amersham

biosciences). The Western blot showed an increase in LDLR protein levels in the presence of antibody 31H4, as depicted in FIG. 9.

EXAMPLE 15

Serum cholesterol Lowering Effect of Antibody 31H4 in a 13 Day Study

[0466] In order to assess total serum cholesterol (TC) lowering in wild type (WT) mice via antibody therapy against PCSK9 protein in a 13 day study, the following procedure was performed.

[0467] Male WT mice (C57BL/6 strain, aged 9-10 weeks, 17-27 g) obtained from Jackson Laboratory (Bar Harbor, ME) were fed a normal chow (Harland-Teklad, Diet 2918) through out the duration of the experiment. Mice were administered either anti-PCSK9 antibody 31H4 (2 mg/ml in PBS) or control IgG (2 mg/ml in PBS) at a level of 10 mg/kg through the mouse's tail vein at T=0. Naïve mice were also set aside as naïve control group.

[0468] Dosing groups and time of sacrifice are shown in Table 10. Animals were sacrificed and livers were extracted and prepared as in Example 13.

TABLE 10

Group	Treatment	Time point after dosing	Number	Dose
1	IgG	72 hr	6	10mg/kg
2	31H4	72 hr	6	10mg/kg
3	31H4	72 hr	6	1mg/kg
4	IgG	144 hr	6	10mg/kg
5	31H4	144 hr	6	10mg/kg
6	31H4	144 hr	6	1mg/kg
7	IgG	192 hr	6	10mg/kg
8	31H4	192 hr	6	10mg/kg
9	31H4	192 hr	6	1mg/kg
10	IgG	240 hr	6	10mg/kg
11	31H4	240hr	6	10mg/kg
12	31H4	240hr	6	1mg/kg
13	IgG	312 hr	6	10mg/kg

Group	Treatment	Time point after dosing	Number	Dose
14	31H4	312 hr	6	10mg/kg
15	31H4	312 hr	6	1mg/kg
16	Naive	n/a	6	n/a

[0469] When the 6 day experiment was extended to a 13 day study, the same serum cholesterol lowering effect observed in the 6 day study was also observed in the 13 day study. More specifically, animals dosed at 10 mg/kg demonstrated a 31% decrease in serum cholesterol on day 3, which gradually returned to pre-dosing levels by day 13. FIG. 10A depicts the results of this experiment. FIG. 10C depicts the results of repeating the above procedure with the 10mg/kg dose of 31H4, and with another antibody, 16F12, also at 10mg/kg. Dosing groups and time of sacrifice are shown in Table 11.

TABLE 11

Group	Treatment	Time point after dosing	Number	Dose
1	IgG	24 hr	6	10mg/kg
2	16F12	24 hr	6	10mg/kg
3	31H4	24 hr	6	10mg/kg
4	IgG	72 hr	6	10mg/kg
5	16F12	72 hr	6	10mg/kg
6	31H4	72 hr	6	10mg/kg
7	IgG	144 hr	6	10mg/kg
8	16F12	144 hr	6	10mg/kg
9	31H4	144 hr	6	10mg/kg
10	IgG	192 hr	6	10mg/kg
11	16F12	192 hr	6	10mg/kg
12	31H4	192 hr	6	10mg/kg
13	IgG2	240 hr	6	10mg/kg
14	16F12	240hr	6	10mg/kg

Group	Treatment	Time point after dosing	Number	Dose
15	31H4	240hr	6	10mg/kg
16	IgG2	312 hr	6	10mg/kg
17	16F12	312 hr	6	10mg/kg
18	31H4	312 hr	6	10mg/kg
19	Naive	n/a	6	10mg/kg

[0470] As shown in FIG. 10C both 16F12 and 31H4 resulted in significant and substantial decreases in total serum cholesterol after just a single dose and provided benefits for over a week (10 days or more). The results of the repeated 13 day study were consistent with the results of the first 13 day study, with a decrease in serum cholesterol levels of 26% on day 3 being observed. For FIG. 10A and FIG. 10B, the percentage change is in relation to the control IgG at the same time point (*P<0.01). For FIG. 10C, the percentage change is in relation to the control IgG at the same time point (*P<0.05).

EXAMPLE 16

Effect of Antibody 31H4 on HDL Levels in a 13 Day Study

[0471] The HDL levels for the animals in Example 15 were also examined. HDL levels decreased in the mice. More specifically, animals dosed at 10 mg/kg demonstrated a 33% decrease in HDL levels on day 3, which gradually returned to pre-dosing levels by day 13. FIG. 10B depicts the results of the experiment. There was a decrease in HDL levels of 34% on day 3. FIG. 10B depicts the results of the repeated 13 day experiment.

[0472] As will be appreciated by one of skill in the art, while the antibodies will lower mouse HDL, this is not expected to occur in humans because of the differences in HDL in humans and other organisms (such as mice). Thus, the decrease in mouse HDL is not indicative of a decrease in human HDL.

EXAMPLE 17

Repeated Administration of Antibodies Produce Continued Benefits of Antigen Binding Peptides

[0473] In order to verify that the results obtained in the Examples above can be prolonged for further benefits with additional doses, the Experiments in Examples 15 and 16 were repeated with the dosing schedule depicted in FIG. 11A. The results are displayed in FIG. 11B. As can be seen in the graph in FIG. 11B, while both sets of mice displayed a significant decrease in total serum cholesterol because all of the mice received an initial injection of the 31H4 antigen binding protein, the mice that received additional injections of the 31H4 ABP displayed a continued reduction in total serum cholesterol, while those mice that only received the control injection eventually displayed an increase in their total serum cholesterol. For FIG. 11, the percentage change is in relation to the naïve animals at t=0 hours (*P<0.01, **P<0.001).

[0474] The results from this example demonstrate that, unlike other cholesterol treatment methods, in which repeated applications lead to a reduction in efficacy because of biological adjustments in the subject, the present approach does not seem to suffer from this issue over the time period examined. Moreover, this suggests that the return of total serum cholesterol or HDL cholesterol levels to baseline, observed in the previous exampless is not due to some resistance to the treatment being developed by the subject, but rather the depletion of the antibody availability in the subject.

EXAMPLE 18

Epitope Mapping of Human Anti PCSK9 Antibodies

[0475] This example outlines methods for determining which residues in PCSK9 are involved in forming or part of the epitope for the antigen binding proteins disclosed herein to PCSK9.

[0476] In order to determine the epitopes to which certain of the ABPs of the present invention bind, the epitopes of the ABPs can be mapped using synthetic peptides derived from the specific PCSK9 peptide sequence.

[0477] A SPOTs peptide array (Sigma Genosys) can be used to study the molecular interaction of the human anti-PCSK9 antibodies with their peptide epitope. SPOTs technology is based on the solid-phase synthesis of peptides in a format suitable for the systematic analysis of antibody epitopes. Synthesis of custom arrayed oligopeptides is commerically available from Sigma-Genosys. A peptide array of overlapping oligopeptides derived from the amino-acid sequence of the PCSK9 peptide can be obtained. The array can comprise a series of 12-mer

peptides as spots on a polypropylene membrane sheets. The peptide array can span the entire length of the PCSK9 mature sequence. Each consecutive peptide can be offset by 1 residue from the previous one, yielding a nested, overlapping library of arrayed oligopeptides. The membrane carrying the peptides can be reacted with different anti-PCSK9 antibodies (1 micrograms/ml). The binding of the mAbs to the membrane-bound peptides can be assessed by an enzyme-linked immunosorbent assay using HRP-conjugated secondary antibody followed by enhanced chemiluminescence (ECL).

[0478] In addition, functional epitopes can be mapped by combinatorial alanine scanning. In this process, a combinatorial alanine-scanning strategy can be used to identify amino acids in the PCSK9 protein that are necessary for interaction with anti-PCSK9 ABPs. To accomplish this, a second set of SPOTs arrays can be used for alanine scanning. A panel of variant peptides with alanine substitutions in each of the 12 residues can be scanned as above. This will allow for the epitopes for the ABPs to the human PCSK9 to be mapped and identified.

[0479] In the alternative, given that it is possible that the epitope is conformational, a combination of alanine scanning and/or arginine scanning, antibody FAB/PCSK9 co-crystalization, and limited proteolysis/LC-MS (liquid chromatography mass spec.) can be employed to indentify the epitopes.

Example 19

Uses of PCSK9 Antibodies for the Treatment of Cholesterol Related Disorders

[0480] A human patient exhibiting a Cholesterol Related Disorder (in which a reduction in cholesterol (such as serum cholesterol) can be beneficial) is administered a therapeutically effective amount of PCSK9 antibody, 31H4 (or, for example, 21B12 or 16F12). At periodic times during the treatment, the patient is monitored to determine whether the symptoms of the disorder has subsided. Following treatment, it is found that patients undergoing treatment with the PCSK9 antibody have reduced serum cholesterol levels, in comparison to patients that are not treated.

EXAMPLE 20

Uses of PCSK9 Antibodies for the Treatment of Hypercholesterolemia

[0481] A human patient exhibiting symptoms of hypercholesterolemia is administered a therapeutcially effective amount of PCSK9 antibody, such as 31H4 (or, for example, 21B12 or 16F12). At periodic times during the treatment, the human patient is monitored to determine whether the serum cholesterol level has declined. Following treatment, it is found that the patient receiving the treatment with the PCSK9 antibodies has reduced serum cholesterol levels in comparison to arthritis patients not receiving the treatment.

EXAMPLE 21

Uses of PCSK9 Antibodies for the Prevention of Coronary Heart Disease and/or Recurrent Cardiovascular Events

[0482] A human patient at risk of developing coronary haeart disease is identified. The patient is administered a therapeutically effective amount of PCSK9 antibody, such as 31H4 (or, for example, 21B12 or 16F12), either alone, concurrently or sequentially with a statin, e.g., simvastatin. At periodic times during the treatment, the human patient is monitored to determine whether the patient's total serum cholesterol level changes. Throughout the preventative treatment, it is found that the patient receiving the treatment with the PCSK9 antibodies has reduced serum cholesterol thereby reducing their risk to coronary heart disases or recurrent cardiovascular events in comparison to patients not receiving the treatment.

EXAMPLE 22

Use of PCSK9 Antibodies as a Diagnostic Agent

[0483] An Enzyme-Linked Immunosorbent Assay (ELISA) for the detection of PCSK9 antigen in a sample can used to diagnose patients exhibiting high levels of PCSK9 production. In the assay, wells of a microtiter plate, such as a 96-well microtiter plate or a 384-well microtiter plate, are adsorbed for several hours with a first fully human monoclonal antibody directed against PCSK9. The immobilized antibody serves as a capture antibody for any of the PCSK9 that may be present in a test sample. The wells are rinsed and treated with a blocking agent such as milk protein or albumin to prevent nonspecific adsorption of the analyte.

[0484] Subsequently the wells are treated with a test sample suspected of containing the PCSK9, or with a solution containing a standard amount of the antigen. Such a sample may be, for example, a serum sample from a subject suspected of having levels of circulating antigen considered to be diagnostic of a pathology.

[0485] After rinsing away the test sample or standard, the wells are treated with a second fully human monoclonal PCSK9 antibody that is labeled by conjugation with biotin. A monoclonal or mouse or other species origin can also be used. The labeled PCSK9 antibody serves as a detecting antibody. After rinsing away excess second antibody, the wells are treated with avidin-conjugated horseradish peroxidase (HRP) and a suitable chromogenic substrate. The concentration of the antigen in the test samples is determined by comparison with a standard curve developed from the standard samples.

[0486] This ELISA assay provides a highly specific and very sensitive assay for the detection of the PCSK9 antigen in a test sample.

Determination of PCSK9 Protein Concentration in Subjects

[0487] A sandwich ELISA can quantify PCSK9 levels in human serum. Two fully human monoclonal PCSK9 antibodies from the sandwich ELISA, recognize different epitopes on the PCSK9 molecule. Alternatively, monoclonal antibodies of mouse or other species origin may be used. The ELISA is performed as follows: 50 µL of capture PCSK9 antibody in coating buffer (0.1 M $NaHCO_3$, pH 9.6) at a concentration of 2 µg/mL is coated on ELISA plates (Fisher). After incubation at 4° C. overnight, the plates are treated with 200 µL of blocking buffer (0.5% BSA, 0.1% Tween 20, 0.01% Thimerosal in PBS) for 1 hour at 25° C. The plates are washed (3x) using 0.05% Tween 20 in PBS (washing buffer, WB). Normal or patient sera (Clinomics, Bioreclaimation) are diluted in blocking buffer containing 50% human serum. The plates are incubated with serum samples overnight at 4° C, washed with WB, and then incubated with 100 µL/well of biotinylated detection PCSK9 antibody for 1 hour at 25° C After washing, the plates are incubated with HRP-Streptavidin for 15 minutes, washed as before, and then treated with 100 µL/well of o-phenylenediamine in H_2O_2 (Sigma developing solution) for color generation. The reaction is stopped with 50 µL/well of H_2SO_4 (2M) and analyzed using an ELISA plate reader at 492 nm. Concentration of PCSK9 antigen in serum samples is calculated by comparison to dilutions of purified PCSK9 antigen using a four parameter curve fitting program.

Determination of PCSK9 Variant Protein Concentration in Subjects

[0488] The steps outlined above can be performed using antibodies noted herein that bind to both the wild type PCSK9 and the variant PCSK9 (D374Y). Next, antibodies that bind to

the wild type but not the mutant can be used (again using a similar protocol as outlined above) to determine if the PCSK9 present in the subject is wild type or the D374Y variant. As will be appreciatedy by one of skill in the art, results that are positive for both rounds will be wild-type, while those that are positive for the first round, but not the second round of antibodies, will include the D374Y mutation. There are high frequency mutations in the population that are known and the could benefit particularly from an agent such as the ABPs disclosed herein.

EXAMPLE 23

Use of PCSK9 Antigen Binding Protein for the Prevention of Hypercholesterolemia

[0489] A human patient exhibiting a risk of developing hypercholesterolemia is identified via family history analysis and/or lifestyle, and/or current cholesterol levels. The subject is regularly administered (e.g., one time weekly) a therapeutically effective amount of PCSK9 antibody, 31H4 (or, for example, 21B12 or 16F12). At periodic times during the treatment, the patient is monitored to determine whether serum cholesterol levels have decreased. Following treatment, it is found that subjects undergoing preventative treatment with the PCSK9 antibody have lowered serum cholesterol levels, in comparison to subjects that are not treated.

EXAMPLE 24

PCSK9 ABPs Further Upregulated LDLR in the Presence of Statins

[0490] This example demonstrates that ABPs to PCSK9 produced further increases in LDLR availability when used in the presence of statins, demonstrating that further benefits can be achieved by the combined use of the two.

[0491] HepG2 cells were seeded in DMEM with 10% fetal bovine serum (FBS) and grown to ~90% confluence. The cells were treated with indicated amounts of mevinolin (a statin, Sigma) and PCSK9 ABPs (FIGs. 12A-12C) in DMEM with 3% FBS for 48 hours. Total cell lysates were prepared. 50 mg of total proteins were separated by gel electrophoresis and transferred to PVDF membrane. Immunoblots were performed using rabbit anti-human LDL receptor antibody (Fitzgerald) or rabbit anti-human b-actin antibody. The enhanced chemiluminescent results are shown in the top panels of FIGs. 12A-12C. The intensity of the bands were quantified by ImageJ software and normalized by b-actin. The relative levels of

LDLR are shown in the lower panels of FIGs. 12A-12C. ABPs 21B12 and 31H4 are PCSK9 neutralizing antibodies, while 25A7.1 is a non-neutralizing antibody.

[0492] HepG2-PCSK9 cells were also created. These were stable HepG2 cell line transfected with human PCSK9. The cells were seeded in DMEM with 10% fetal bovine serum (FBS) and grew to ~90% confluence. The cells were treated with indicated amounts of mevinolin (Sigma) and PCSK9 ABPs (FIGs. 12D-12F) in DMEM with 3% FBS for 48 hours. Total cell lysates were prepared. 50 mg of total proteins were separated by gel electrophoresis and transferred to PVDF membrane. Immunoblots were performed using rabbit anti-human LDL receptor antibody (Fitzgerald) or rabbit anti-human b-actin antibody. The enhanced chemiluminescent results are shown in the top panels. The intensity of the bands were quantified by ImageJ software and normalized by b-actin.

[0493] As can be seen in the results depicted in FIGs. 12A-12F, increasing amounts of the neutralizing antibody and increasing amounts of the statin generally resulted in increases in the level of LDLR. This increase in effectiveness for increasing levels of the ABP is especially evident in FIGs. 12D-12F, in which the cells were also transfected with PCSK9, allowing the ABPs to demonstrate their effectiveness to a greater extent.

[0494] Interestingly, as demonstrated by the results in the comparison of FIGs. 12D-12F to 12A-12C, the influcence of the ABP concentrations on LDLR levels increased dramatically when PCSK9 was being produced by the cells. In addition, it is clear that the neutralizing ABPs (21B12 and 31H4) resulted in a greater increase in LDLR levels, even in the presence of statins, than the 25A7.1 ABP (a non-neutralizer), demonstrating that additional benefits can be achieved by the use of both statins and ABPs to PCSK9.

EXAMPLE 25

Consensus Sequences

[0495] Consensus sequences were determined using standard phylogenic analyses of the CDRs corresponding to the V_H and V_L of anti-PCSK9 ABPs. The consensus sequences were determined by keeping the CDRs contiguous within the same sequence corresponding to a V_H or V_L. Briefly, amino acid sequences corresponding to the entire variable domains of either V_H or V_L were converted to FASTA formatting for ease in processing comparative alignments and inferring phylogenies. Next, framework regions of these sequences were replaced with an

artificial linker sequence ("bbbbbbbbbb" placeholders, non-specific nucleic acid construct) so that examination of the CDRs alone could be performed without introducing any amino acid position weighting bias due to coincident events (*e.g.*, such as unrelated antibodies that serendipitously share a common germline framework heritage) while still keeping CDRs contiguous within the same sequence corresponding to a V_H or V_L. V_H or V_L sequences of this format were then subjected to sequence similarity alignment interrogation using a program that employs a standard ClutalW-like algorithm (*see*, Thompson *et al.*, 1994, *Nucleic Acids Res.* 22:4673-4680). A gap creation penalty of 8.0 was employed along with a gap extension penalty of 2.0. This program likewise generated phylograms (phylogenic tree illustrations) based on sequence similarity alignments using either UPGMA (unweighted pair group method using arithmetic averages) or Neighbor-Joining methods (*see*, Saitou and Nei, 1987, *Molecular Biology and Evolution* 4:406-425) to construct and illustrate similarity and distinction of sequence groups *via* branch length comparison and grouping. Both methods produced similar results but UPGMA-derived trees were ultimately used as the method employs a simpler and more conservative set of assumptions. UPGMA-derived trees were generated where similar groups of sequences were defined as having fewer than 15 substitutions per 100 residues (*see*, legend in tree illustrations for scale) amongst individual sequences within the group and were used to define consensus sequence collections. The results of the comparisons are depicted in FIGs. 13A-13J. In FIG. 13E, the groups were chosen so that sequences in the light chain that clade are also a clade in the heavy chain and have fewer than 15 substitutions.

[0496] As will be appreciated by one of skill in the art, the results presented in FIGs. 13A-13J present a large amount of guidance as to the importance of particular amino acids (for example, those amino acids that are conserved) and which amino acid positions can likely be altered (for example, those positions that have different amino acids for different ABPs).

EXAMPLE 26

Mouse Model for PCSK9 and ABP ability to lower LDL *in vivo*

[0497] To generate mice which over-expressed human PCSK9, three week old WT C57Bl/6 mice were injected via tail vein administration with various concentrations of adenoassociated virus (AAV), recombinantly modified to express human PCSK9, to determine the correct titer which would provide a measurable increase of LDL-cholesterol in the

mice. Using this particular virus that expressed human PCSK9, it was determined that 4.5 x 10E12 pfu of virus would result in an LDL-cholesterol level of approximately 40mg/dL in circulating blood (normal levels of LDL in a WT mice are approximately 10mg/dL). The human PCSK9 levels in these animals was found to be approximately 13ug/mL. A colony of mice were generated using this injection criteria.

[0498] One week after injection, mice were assessed for LDL-cholesterol levels, and randomized into different treatment groups. Animals were then administered, via tail vein injection, a single bolus injection of either 10mg/kg or 30mg/kg of 16F12, 21B12, or 31H4 antigen binding proteins. IgG2 ABP was administered in a separate group of animals as a dosing control. Subgroups of animals (n=6-7) were then euthanized at 24 and 48 hours after ABP administration. There were no effects on LDL-cholesterol levels following IgG2 administration at either dose. Both 31H4 and 21B12 demonstrated significant LDL-cholesterol lowering up to and including 48 hours post-administration, as compared to IgG2 control (shown in FIG. 14A and 14B at two different doses). 16F12 shows an intermediary LDL-cholesterol lowering response, with levels returning to baseline of approximately 40mg/dL by the 48 hour time point. This data is consistent with *in vitro* binding data (Biacore and Kinexa), which shows near equivalent binding affinity between 31H4 and 21B12, and a lesser affinity of 16F12 to human PCSK9.

[0499] As can be seen in the results, total cholesterol and HDL-cholesterol were reduced by the PCSK9 ABPs in the model (both total and HDL-C are elevated above WT mice due to the overexpression of PCSK9). While cholesterol lowering in this model appears to occur over a relatively short period of time, this is believed to be due to the levels of human PCSK9 that are present, which are supraphysiologically high in this model. In addition, given that the expression is governed by AAV, there is no regulation of PCSK9 expression. In these figures, (*) denotes a $P<0.05$, and (**) denotes a $P<0.005$ as compared to LDL-cholesterol levels observed in IgG2 control injected animals at the same time point. The 13 microgram/ml level of serum human PCSK9 in the mice corresponds to an approximately 520-fold increase above the endogenous mouse PCSK9 levels (~ 25 ng/ml), and an approximately 75-fold increase above average human serum levels (~ 175 ng/ml). Thus, the antigen binding proteins should be even more effective in humans.

[0500] As will be appreciated by one of skill in the art, the above results demonstrate that appropriateness of the mouse model for testing the antigen binding protein's ability to alter serum cholesterol in a subject. One of skill in the art will also recognize that the use of mouse HDL to monitor serum cholesterol levels in a mouse, while useful for monitoring mouse serum cholesterol levels, is not indicative of the ABPs impact on human HDL in humans. For example, Cohen et al. ("Sequence variations in PCSK9, low LDL, and protection against coronary heart disease", N Engl J Med, 354:1264-1272, 2006) demonstrated the lack of any effect of the PCSK9 loss-of-function mutations on human HDL levels (the entirety of which is incorporated by reference). Thus, one of skill in the art will appreciate that the ability of the ABP to lower mouse HDL (which lack LDL) is not indicative of the ABP's ability to lower human HDL. Indeed, as shown by Cohen, this is unlikely to occur for neutralizing antibodies in humans.

EXAMPLE 27

31H4 and 21B12 bind to the ProCat region of PCSK9

[0501] The present example describes one method for determining where various antibodies bind to PCSK9.

[0502] The ProCat (31-449 of SEQ ID NO: 3) or V domain (450-692 of SEQ ID NO: 3) of the PCSK9 protein was combined with either antibody 31H4 or 21B12. The samples were analyzed by Native PAGE for complex formation. As can be seen in FIG. 16A and FIG. 16B, gel shifts were present for the ProCat / 31H4 and ProCat / 21B12 samples, demonstrating that the antibodies bound to the ProCat domain.

EXAMPLE 28

The LDLR EGFa domain binds to the catalytic domain of PCSK9

[0503] The present example presents the solved crystal structure of PCSK9 ProCat (31-454 of SEQ ID NO: 3) bound to the LDLR EGFa domain (293-334) at 2.9 Å resolution (the conditions for which are described in the below Examples).

[0504] A representation of the structure of PCSK9 bound to EGFa is shown in FIG. 17. The crystal structure (and its depiction in FIG. 17) reveals that the EGFa domain of LDLR binds to the catalytic domain of PCSK9. In addition, the interaction of PCSK9 and EGFa

appears to occur across a surface of PCSK9 that is between residues D374 and S153 in the structure depicted in FIG. 17.

[0505] Specific core PCSK9 amino acid residues of the interaction interface with the LDLR EGFa domain were defined as PCSK9 residues that are within 5 Å of the EGFa domain. The core residues are as follows: S153, I154, P155, R194, D238, A239, I369, S372, D374, C375, T377, C378, F379, V380, and S381.

[0506] Boundary PCSK9 amino acid residues of the interaction interface with the LDLR EGFa domain were defined as PCSK9 residues that are 5-8 Å from the EGFa domain. The boundary residues are as follows: W156, N157, L158, E159, H193, E195, H229, R237, G240, K243, D367, I368, G370, A371, S373, S376, and Q382. Residues that are underlined are nearly or completely buried within PCSK9.

[0507] As will be appreciated by one of skill in the art, the results from this example demonstrate where PCSK9 and EGFa interact. Thus, antibodies that interact with or block any of these residues can be useful as antibodies that inhibit the interaction between PCSK9 and the EGFa domain of LDLR (and/or LDLR generally). In some embodiments, antibodies that, when bound to PCSK9, interact with or block any of the above residues or are within 15-8, 8, 8-5, or 5 angstroms of the above residues are contemplated to provide useful inhibition of PCSK9 binding to LDLR.

EXAMPLE 29

31H4 interacts with amino acid residues from both the pro- and catalytic domains of PCSK9

[0508] The present example presents the crystal structure of full length PCSK9 (N533A mutant of SEQ ID NO: 3) bound to the Fab fragment of 31H4, determined to 2.3 Å resolution (the conditions for which are described in the below Examples). This structure, depicted in FIG. 18A and 18B, shows that 31H4 binds to PCSK9 in the region of the catalytic site and makes contacts with amino acid residues from both the prodomain and catalytic domain.

[0509] The depicted structure also allows one to identify specific core PCSK9 amino acid residues for the interaction interface of 31H4 with PCSK9. This was defined as residues that are within 5 Å of the 31H4 protein. The core residues are as follows: W72, F150, A151, Q152, T214, R215, F216, H217, A220, S221, K222, S225, H226, C255, Q256, G257, K258,

N317, F318, T347, L348, G349, T350, L351, E366, D367, D374, V380, S381, Q382, S383, and G384.

[0510] The structures were also used to identify boundary PCSK9 amino acid residues for the interaction interface with 31H4. These residues were PCSK9 residues that were 5-8 Å from the 31H4 protein. The boundary residues are as follows: K69, D70, P71, S148, V149, D186, T187, E211, D212, G213, R218, Q219, C223, D224, G227, H229, L253, N254, G259, P288, A290, G291, G316, R319, Y325, V346, G352, T353, G365, I368, I369, S372, S373, C378, F379, T385, S386, and Q387. Amino acid residues completely buried within the PCSK9 protein are underlined.

[0511] As will be appreciated by one of skill in the art, FIG. 18B depicts the interaction between the CDRs on the antigen binding protein and PCSK9. As such, the model allows one of skill in the art to identify the residues and/or CDRs that are especially important in the paratope, and which residues are less critical to the paratope. As can be seen in FIG. 18B, the heavy chain CDR1, CDR2, and CDR3 are most directly involved in the antigen binding protein's binding to the epitope, with the CDRs from the light chain being relatively far away from the epitope. As such, it is probable that larger variations in the light chain CDRs are possible, without unduly interfering with the binding of the antigen binding protein to PCSK9. In some embodiments, residues in the structures that directly interact are conserved (or alternatively conservatively replaced) while residues that are not directly interacting with one another can be altered to a greater extent. As such, one of skill in the art, given the present teachings, can predict which residues and areas of the antigen binding proteins can be varied without unduly interfering with the antigen binding protein's ability to bind to PCSK9. For example, those residues that are located closest to PCSK9 when the antigen binding protein is bound to PCSK9 are those that likely play a more important role in the binding of the antigen binding protein to PCSK9. As above, these residues can be divided into those that are within 5 angstroms of PCSK9 and those that are between 5 and 8 angstroms. Specific core 31H4 amino acid residues of the interaction interface with PCSK9 were defined as 31H4 residues that are within 5 Å of the PCSK9 protein. For the heavy chain, the residues that are within 5 angstroms include the following: T28, S30, S31, Y32, S54, S55, S56, Y57, I58, S59, Y60, N74, A75, R98, Y100, F102, W103, S104, A105, Y106, Y107, D108, A109, and D111. For the light chain,

those residues that are within 5 angstroms include the following: L48, S51, Y93, and S98. For the heavy chain, those residues that are 5-8 Å from the PCSK9 protein include the following: G26, F27, F29, W47, S50, I51, S52, S53, K65, F68, T69, I70, S71, R72, D73, K76, N77, D99, D101, F110, and V112. For the light chain, those residues that are within 5-8 angstroms of PCSK9 include A31, G32, Y33, D34, H36, Y38, I50, G52, N55, R56, P57, S58, D94, S95, S96, L97, G99, and S100.

[0512] As will be appreciated by one of skill in the art, the results from Example 29 demonstrate where antibodies to PCSK9 can interact on PCSK9 and still block PCSK9 from interacting with EGFa (and thus LDLR). Thus, antigen binding proteins that interact with any of these PCSK9 residues, or that block any of these residues (*e.g.*, from other antigen binding proteins that bind to these residues), can be useful as antibodies that inhibit the interaction of PCSK9 and EGFa (and LDLR accordingly). Thus, in some embodiments, antigen binding proteins that interact with any of the above residues or interact with residues that are within 5 Å of the above residues are contemplated to provide useful inhibition PCSK9 binding to LDLR. Similarly, antigen binding proteins that block any of the above residues (which can be determined, for example, via a competition assay) can also be useful for inhibition of the PCSK9/LDLR interaction.

EXAMPLE 30

21B12 binds to the catalytic domain of PCSK9, has a distinct binding site from 31H4 and can bind to PCSK9 simultaneously with 31H4

[0513] The present example presents the crystal structure of PCSK9 ProCat (31-449 of SEQ ID NO: 3) bound to the Fab fragments of 31H4 and 21B12, determined at 2.8 Å resolution (the conditions for which are described in the below Examples). This crystal structure, depicted in FIG. 19A and FIG. 19B, shows that 31H4 and 21B12 have distinct binding sites on PCSK9 and that both antigen binding proteins can bind to PCSK9 simultaneously. The structure shows that 21B12 interacts with amino acid residues from PCSK9's catalytic domain. In this structure, the interaction between PCSK9 and 31H4 is similar to what was observed above.

[0514] Specific core PCSK9 amino acid residues of the interaction interface with 21B12 were defined as PCSK9 residues that are within 5 Å of the 21B12 protein. The core

residues are as follows: S153, S188, I189, Q190, S191, D192, R194, E197, G198, R199, V200, D224, R237, D238, K243, S373, D374, S376, T377, and F379.

[0515] Boundary PCSK9 amino acid residues of the interaction interface with 21B12 were defined as PCSK9 residues that were 5-8 Å from the 21B12 protein. The boundary residues are as follows: I154, T187, H193, E195, I196, M201, V202, C223, T228, S235, G236, A239, G244, M247, I369, S372, C375, and C378. Amino acid residues nearly or completely buried within the PCSK9 protein are underlined.

[0516] As will be appreciated by one of skill in the art, FIG. 19B depicts the interaction between the CDRs on the antigen binding protein and PCSK9. As such, the model allows one of skill in the art to identify the residues and/or CDRs which are especially important for the paratope and which residues are less critical to the paratope. As can be seen in the structure, heavy chain CDR2 and light chain CDR1 appear to closely interact with the epitope. Next, heavy chain CDR1, heavy chain CDR3 and light chain CDR3, appear to be close to the epitope, but not as close as the first set of CDRs. Finally, light chain CDR2 appears to be some distance from the epitope. As such, it is probable that larger variations in the more distant CDRs are possible without unduly interfering with the binding of the antigen binding protein to PCSK9. In some embodiments, residues in the structures that directly interact are conserved (or alternatively conservatively replaced) while residues that are not directly interacting with one another can be altered to a greater extent. As such, one of skill in the art, given the present teachings, can predict which residues and areas of the antigen binding proteins can be varied without unduly interfering with the antigen binding protein's ability to bind to PCSK9. For example, those residues that are located closest to PCSK9 when the antigen binding protein is bound to PCSK9 are those that likely play a more important role in the binding of the antigen binding protein to PCSK9. As above, these residues can be divided into those that are within 5 angstroms of PCSK9 and those that are between 5 and 8 angstroms. Specific core 21B12 amino acid residues of the interaction interface with PCSK9 were defined as 21B12 residues that are within 5 Å of the PCSK9 protein. For the heavy chain, the residues that are within 5 angstroms include the following: T30, S31, Y32, G33, W50, S52, F53, Y54, N55, N57, N59, R98, G99, Y100, and G101. For the light chain, those residues that are within 5 angstroms include the following: G30, G31, Y32, N33, S34, E52, Y93, T94, S95, T96, and S97. For the heavy chain,

those residues that are 5-8 Å from the PCSK9 protein include the following: T28, L29, I34, S35, W47, V51, G56, T58, Y60, T72, M102, and D103. For the light chain, those residues that are within 5-8 angstroms of PCSK9 include the following: S26, V29, V35, Y51, N55, S92, M98, and V99.

[0517] As will be appreciated by one of skill in the art, the results from Example 30 demonstrate where antigen binding proteins to PCSK9 can interact on PCSK9 and still block PCSK9 from interacting with EGFa (and thus LDLR). Thus, antigen binding proteins that interact with any of these PCSK9 residues or that block any of these residues can be useful as antibodies that inhibit the interaction of PCSK9 and EGFa (and LDLR accordingly). Thus, in some embodiments, antibodies that interact with any of the above residues or interact with residues that are within 5 Å of the above residues are contemplated to provide useful inhibition PCSK9 binding to LDLR. Similarly, antigen binding proteins that block any of the above residues (which can be determined, for example, via a competition assay) can also be useful for inhibition of PCSK9/LDLR interaction.

EXAMPLE 31

Interaction between EGFa, PCSK9, and the Antibodies

[0518] The structure of the ternary complex (PCSK9 / 31H4 / 21B12) from the above example was overlaid on the PCSK9 / EGFa structure (determined as described in Example 28) and the result of this combination is depicted in FIG. 20A. This figure demonstrates areas on PCSK9 which can be usefully targeted to inhibit PCSK9 interaction with EGFa. The figure shows that both 31H4 and 21B12 partially overlap with the position of the EGFa domain of LDLR and sterically interfere with its binding to PCSK9. In addition, as can be seen in the structures, 21B12 directly interacts with a subset of amino acid residues that are specifically involved in binding to the LDLR EGFa domain.

[0519] As noted above, analysis of the crystal structures identified specific amino acids involved in the interaction between PCSK9 and the partner proteins (the core and boundary regions of the interface on the PCSK9 surface) and the spatial requirements of these partner proteins to interact with PCSK9. The structures suggest ways to inhibit the interaction between PCSK9 and the LDLR. First, as noted above, binding an agent to PCSK9 where it shares residues in common with the binding site of the EGFa domain of the LDLR would inhibit the

interaction between PCSK9 and the LDLR. Second, an agent that binds outside of the residues in common can sterically interfere with the EGFa domain or regions of the LDLR that are either N- or C-terminal to the EGFa domain to prevent the interaction between PCSK9 and the LDLR.

[0520] In some embodiments, the residues that are involved in both EGFa binding and are close to the areas where the above noted antigen binding proteins bind are especially useful for manipulating PCSK9 binding to LDLR. For example, amino acid residues from interfaces in common in both the core region and boundary region for the different binding partners are listed in Table 12 below. Amino acid residues completely buried within the PCSK9 protein are underlined.

Table 12

Parameters	Amino acid position(s)
31H4 / EGFa both under 5 Å	D374, V380, S381
31H4 under 5 Å / EGFa 5-8 Å	D367, Q382
31H4 at 5-8 Å / EGFa under 5 Å	I369, S372, C378, F379
31H4 / EGFa both at 5-8 Å	H229, S373
21B12 / EGFa both under 5 Å	S153, R194, D238, D374, T377, F379
21B12 under 5 Å / EGFa 5-8 Å	R237, K243, S373, S376
21B12 at 5-8 Å / EGFa under 5 Å	I154, A239, I369, S372, C375, C378
21B12 / EGFa both at 5-8 Å	H193, E195

[0521] As will be appreciated by one of skill in the art, in some embodiments, the antigen binding proteins bind to and/or block at least one of the above noted residues.

EXAMPLE 32

Structural interaction of LDLR and PCSK9

[0522] A model of full length PCSK9 bound to a full length representation of the LDLR was made using the PCSK9 ProCat (31-454 of SEQ ID NO: 3)/EGFa complex structure.

The structure of full length PCSK9[1] (Piper, D.E. et al. The crystal structure of PCSK9: a regulator of plasma LDL-cholesterol. *Structure* 15, 545-52 (2007)) was overlaid onto the PCSK9 ProCat 31-454 from the complex and the structure of the LDLR in its low pH conformation (Rudenko, G. et al. Structure of the LDL receptor extracellular domain at endosomal pH. *Science* 298, 2353-8 (2002)) was overlaid onto the EGFa domain from the complex. Depictions of the model are shown in FIGs. 20B and 20C. The EGFa domain is indicated by the box in the figure. The figures show regions of the LDLR outside of the immediate EGFa binding domain that lie in close proximity to PCSK9. FIGs. 20D-20F show the above interaction, along with mesh surface representations of antibody 31H4 and 21B12 from three different angles. As is clear from the depictions, not only can the antibody interact and/or interfere with LDLR's interaction with PCSK9 at the actual binding site, but other steric interactions appear to occur as well.

[0523] In light of the above results, it is clear that antigen binding proteins that bind to PCSK9 can also inhibit the interaction between PCSK9 and the LDLR by clashing with various regions of the LDLR (not just the site at which LDLR and PCSK9 interact). For example, it can clash with repeat 7 (R7), the EGFb domain, and/or the β-propeller domain.

Embodiments of Antigen Binding Molecules that bind to or block EGFa interaction with PCSK9

[0524] As will be appreciated by one of skill in the art, Examples 28-32, and their accompanying figures, provide a detailed description of how and where EGFa interacts with PCSK9 and how two representative neutralizing antigen binding proteins, 21B12 and 31H4 interact with PCSK9 and produce their neutralizing effect. As such, one of skill in the art will readily be able to identify antigen binding molecules that can similarly reduce the binding between EGFa (including LDLR) and PCSK9 by identifying other antigen binding molecules that bind at or near at least one of the same locations on PCSK9. While the relevant locations (or epitopes) on PCSK9 are identified in the figures and the present description, it can also be advantageous to describe these sites as being within a set distance from residues that have been identified as close to the EGFa binding site. In some embodiments, an antigen binding molecule will bind to or within 30 angstroms of one or more of the following residues (numbering in reference to SEQ ID NO: 3): S153, I154, P155, R194, D238, A239, I369, S372, D374, C375, T377, C378, F379, V380, S381, W156, N157, L158, E159, H193, E195, H229, R237, G240,

K243, D367, I368, G370, A371, S373, S376, Q382, W72, F150, A151, Q152, T214, R215, F216, H217, A220, S221, K222, S225, H226, C255, Q256, G257, K258, N317, F318, T347, L348, G349, T350, L351, E366, D367, D374, V380, S381, Q382, S383, G384, K69, D70, P71, S148, V149, D186, T187, E211, D212, G213, R218, Q219, C223, D224, G227, H229, L253, N254, G259, P288, A290, G291, G316, R319, Y325, V346, G352, T353, G365, I368, I369, S372, S373, C378, F379, T385, S386, Q387, S153, S188, I189, Q190, S191, D192, R194, E197, G198, R199, V200, D224, R237, D238, K243, S373, D374, S376, T377, F379, I154, T187, H193, E195, I196, M201, V202, C223, T228, S235, G236, A239, G244, M247, I369, S372, C375, or C378. In some embodiments, the antigen binding molecule binds within 30 angstroms of one or more of the following residues (numbering in reference to SEQ ID NO: 3): S153, I154, P155, R194, D238, A239, I369, S372, D374, C375, T377, C378, F379, V380, S381, W156, N157, L158, E159, H193, E195, H229, R237, G240, K243, D367, I368, G370, A371, S373, S376, or Q382. In some embodiments, the antigen binding molecule binds within 30 angstroms of one or more of the following residues (numbering in reference to SEQ ID NO: 3): W72, F150, A151, Q152, T214, R215, F216, H217, A220, S221, K222, S225, H226, C255, Q256, G257, K258, N317, F318, T347, L348, G349, T350, L351, E366, D367, D374, V380, S381, Q382, S383, G384, K69, D70, P71, S148, V149, D186, T187, E211, D212, G213, R218, Q219, C223, D224, G227, H229, L253, N254, G259, P288, A290, G291, G316, R319, Y325, V346, G352, T353, G365, I368, I369, S372, S373, C378, F379, T385, S386, or Q387. In some embodiments, the antigen binding molecule binds within 30 angstroms of one or more of the following residues (numbering in reference to SEQ ID NO: 3): S153, S188, I189, Q190, S191, D192, R194, E197, G198, R199, V200, D224, R237, D238, K243, S373, D374, S376, T377, F379, I154, T187, H193, E195, I196, M201, V202, C223, T228, S235, G236, A239, G244, M247, I369, S372, C375, or C378.

[0525] In some embodiments, the antigen binding molecule binds within 30, 30-25, 25-20, 20-15, 15-8, 8, 8-5, 5, 5-4, 4 or less angstroms from one or more of the above residues. In some embodiments, the antigen binding molecule, when bound to PCSK9, is within at least one of the above distances, for more than one of the above noted residues. For example, in some embodiments, the antigen binding molecule is within one of the recited distances (e.g., 30, 30-25, 25-20, 20-15, 15-8, 8, 8-5, 5, 5-4, 4 or less) for at least 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 20-25, 25-30, 30-35, 35-40, 40-45, 45-50, 50-55, 55-60, 60-65, 65-70, 70-75

or more of the above residues. In some embodiments, the antigen binding molecule is within one of the recited distances for at least 1-10, 10-20, 20-30, 30-40, 40-50, 50-60, 60-70, 70-80, 80-90, 90-95, 95-99, 99-100% of the residues identified in each group of subgroup thereof (such as only those surface residues in the group). Unless specifically stated otherwise, the distance between the antigen binding molecule and PCSK9 is the shortest distance between the covalently bonded atom on PCSK9 and the covalently bonded atom of the antigen binding molecule that are the closest atoms of PCSK9 and the antigen binding molecule. Similarly, unless specifically stated otherwise, the distance between a residue (on the antigen binding molecule or PCSK9) and another protein (either PCSK9 or the antigen binding molecule respectively), is the distance from the closest point on the identified residue to the closest covalently bonded part of the other protein. In some embodiments, the distance can be measured from the backbone of the amino acid chains. In some embodiments, the distance can be measured between an edge of the paratope and an edge (closest to one another) of the epitope. In some embodiments, the distance can be measured between the center of the surface of the paratope and the center of the surface of the epitope. As will be appreciated by one of skill in the art, the present description is applicable for each of the individual sets of residues listed herein. For example, the above ranges are contemplated generally and specifically for the 8 angstrom residues listed in Examples 28-32 and the 5 angstrom residues listed in Examples 28-32.

[0526] In some embodiments, the antigen binding molecule binds to a surface on PCSK9 that is bound by at least one of EGFa, 21B12, or 31H4. In some embodiments, the antigen binding molecule binds to PCSK9 at a location that overlaps with the interaction locations between PCSK9 and EFGa, Ab 31H4, and/or Ab 21B12 (as described in the above examples and figures). In some embodiments, the antigen binding molecule binds to PCSK9 at a position that is further away from one of the above recited residues. In some embodiments, such an antigen binding molecule can still be an effective neutralizing antigen binding molecule.

[0527] In some embodiments, the structure of the catalytic domain of PCSK9 can be described as generally being triangular (as shown in FIG. 19A). The first side of the triangle is shown as being bound by 31H4. The second side of the triangle is shown as being bound by 21B12, and the third side of the triangle is positioned toward the bottom of the page, immediately above the "FIG. 19A" label. In some embodiments, antigen binding molecules that bind to the first and/or second sides of the catalytic domain of PCSK9 can be useful as

neutralizing antibodies as they can either directly or sterically interfere with EGFa's binding to PCSK9. As will be appreciated by one of skill in the art, when the antigen binding molecules are large enough, such as a full antibody, the antigen binding molecule need not directly bind to the EGFa binding site in order to interfere with the binding of EGFa to PCSK9.

[0528] As will be appreciated by one of skill in the art, while the EGFa domain of the LDLR has been used in many of the examples, the models and structures are still applicable to how the full length LDLR protein will interact with PCSK9. Indeed, the additional structure present on the full length LDLR protein presents additional protein space that can further be blocked by one of the antigen binding molecules. As such, if the antigen binding molecule blocks or inhibits binding of EGFa to PCSK9, it will likely be at least as, if not more, effective with the full length LDLR protein. Similarly, antigen binding molecules that are within a set distance or block various residues that are relevant for inhibiting EGFa binding, will likely be as effective, if not more effective, for the full length LDLR.

[0529] As will be appreciated by one of skill in the art, any molecule that blocks or binds to the above noted PCSK9 residues (or within the recited distances), or that inhibits one or more of the interactions noted in the above examples and figures, can be used to inhibit the interaction of EGFa (or LDLR generally) and PCSK9. As such, the molecule need not be limited to an antigen binding "protein," as any antigen binding molecule can also serve the required purpose. Examples of antigen binding molecules include aptamers, which can be either oligonucleic acid or peptide molecules. Other examples of antigen binding molecules include avimers, peptibodies, small molecules and polymers, and modified versions of EGFa that can increase its affinity to PCSK9 and/or half-life, such as mutation of amino acids, glycosylation, pegylation, Fc fusions, and avimer fusions. As will be appreciated by one of skill in the art, in some embodiments LDLR is not an antigen binding molecule. In some embodiments, binding subsections of LDLR are not antigen binding molecules, *e.g.*, EGFa. In some embodiments, other molecules through which PCSK9 signals *in vivo* are not antigen binding molecules. Such embodiments will be explicitly identified as such.

EXAMPLE 33

Expression and purification of protein samples

[0530] The present example describes some embodiments for how the various embodiments of the PCSK9 proteins/variants were made and purified (including the LDLR EGFa domain). PCSK9 proteins/variants (*e.g.*, PSCK9 31-692 N533A, PCSK9 449TEV and PCSK9 ProCat 31-454) were expressed in baculovirus infected Hi-5 insect cells with an N-terminal honeybee melittin signal peptide followed by a His_6 tag. The PCSK9 proteins were purified by nickel affinity chromatography, ion exchange chromatography and size exclusion chromatography. The melittin-His_6 tag was removed during purification by cleavage with TEV protease. The construct PCSK9 449TEV was used to generate PCSK9 ProCat (31-449) and V domain (450-692) samples. This construct had a TEV protease cleavage site inserted between PCSK9 residues 449 and 450. For the full length N555A variant for crystallography, the PCSK9 31-454 fragment, and the PCSK9 449TEV variant for crystalography, the post rTEV protein product also included an initial GAMG sequence. Thus, post rTEV cleavage, these proteins were GAMG-PCSK9. Furthermore, the PCSK9 449TEV protein included the sequence "ENLYFQ" (SEQ ID NO: 403) inserted between positions H449 and G450 of SEQ ID NO: 3. After cleavage with rTEV, the PCSK9 ProCat protein generated from this construct was GAMG-PCSK9 (31-449)-ENLYFQ and the V domain generated from this construct was PCSK9 (450-692) of SEQ ID NO: 3.

[0531] The 21B12 and 31H4 Fab fragments were expressed in *E. coli*. These proteins were purified by nickel affinity chromatography, size exclusion chromatography and ion exchange chromatography.

[0532] The LDLR EGFa domain (293-334) was expressed as a GST fusion protein in *E. coli*. The EGFa domain was purified by ion exchange chromatography, glutathione sepharose affinity chromatography and size exclusion chromatography. The GST protein was removed during the purification by cleavage with PreScission protease.

EXAMPLE 34

Complex formation and crystallization

[0533] The present example describes how complexes and crystals used in the above structure examination Examples were made.

[0534] The PCSK9 31-692 N533A / 31H4 complex was made by mixing a 1.5 molar excess of the 31H4 Fab with PCSK9. The complex was purified by size exclusion

chromatography to remove excess 31H4 Fab. The PCSK9 31-692 N533A / 31H4 complex crystallizes in 0.1 M Tris pH 8.3, 0.2 M sodium acetate, 15% PEG 4000, 6% dextran sulfate sodium salt (Mr 5000).

[0535] The PCSK9 ProCat 31-449 / 31H4 / 21B12 complex was made by first mixing a 1.5 molar excess of 31H4 Fab with PCSK9 31-449. The complex was separated from excess 31H4 by purification on a size exclusion chromatography column. A 1.5 molar excess of 21B12 Fab was then added to the PCSK9 31-449 / 31H4 complex. The ternary complex was separated from excess 21B12 by purification on a size exclusion chromatography column. The PCSK9 ProCat 31-449 / 31H4 / 21B12 complex crystallizes in 0.1 M Tris pH 8.5, 0.2 M ammonium phosphate monobasic, 50% MPD.

[0536] The PCSK9 ProCat 31-454 / EGFa complex was made by mixing a 1.2 molar excess of EGFa domain with PCSK9 31-454. The PCSK9 ProCat 31-454 / EGFa domain complex crystallizes in 0.2 M potassium formate, 20% PEG 3350.

EXAMPLE 35

Data collection and structure determination

[0537] The present example describes how the datasets were collected and the structures determined for the above structure examination Examples.

[0538] Initial datasets for the PCSK9 31-692 N533A / 31H4 and PCSK9 ProCat 31-449 / 31H4 / 21B12 crystals were collected on a Rigaku FR-E X-ray source. The PCSK9 ProCat 31-454 / EGFa dataset and higher resolution datasets for the PCSK9 31-692 N533A / 31H4 and PCSK9 ProCat 31-449 / 31H4 / 21B12 crystals were collected at the Berkeley Advanced Light Source beamline 5.0.2. All datasets were processed with denzo/scalepack or HKL2000 (Otwinowski, Z., Borek, D., Majewski, W. & Minor, W. Multiparametric scaling of diffraction intensities. *Acta Crystallogr A* 59, 228-34 (2003)).

[0539] PCSK9 / 31H4 crystals grew in the C2 space group with unit cell dimensions a=264.9, b=137.4, c=69.9 Å, β=102.8° and diffract to 2.3 Å resolution. The PCSK9 / 31H4 structure was solved by molecular replacement with the program MOLREP (The CCP4 suite: programs for protein crystallography. *Acta Crystallogr D Biol Crystallogr* 50, 760-3 (1994) using the PCSK9 structure (Piper, D.E. et al. The crystal structure of PCSK9: a regulator of plasma LDL-cholesterol. *Structure* 15, 545-52 (2007)) as the starting search model. Keeping the

PCSK9 31-692 solution fixed, an antibody variable domain was used as a search model. Keeping the PCSK9 31-692 / antibody variable domain solution fixed, an antibody constant domain was used as a search model. The complete structure was improved with multiple rounds of model building with Quanta and refinement with cnx. (Brunger, A.T. et al. Crystallography & NMR system: A new software suite for macromolecular structure determination. *Acta Crystallogr D Biol Crystallogr* 54, 905-21 (1998)).

[0540] PCSK9 / 31H4 / 21B12 crystals grew in the $P2_12_12$ space group with unit cell dimensions a=138.7, b=246.2, c=51.3 Å and diffract to 2.8 Å resolution. The PCSK9 / 31H4 / 21B12 structure was solved by molecular replacement with the program MOLREP using the PCSK9 ProCat / 31H4 variable domain as the starting search model. Keeping the PCSK9 ProCat / 31H4 variable domain fixed, a search for antibody constant domain was performed. Keeping the PCSK9 ProCat / 31H4 / 21B12 constant domain fixed, an antibody variable domain was used as a search model. The complete structure was improved with multiple rounds of model building with Quanta and refinement with cnx.

[0541] PCSK9 / EGFa domain crystals grew in the space group $P6_522$ with unit cell dimensions a=b=70.6, c=321.8 Å and diffract to 2.9 Å resolution. The PCSK9 / EGFa domain structure was solved by molecular replacement with the program MOLREP using the PCSK9 ProCat as the starting search model. Analysis of the electron density maps showed clear electron density for the EGFa domain. The LDLR EGFa domain was fit by hand and the model was improved with multiple rounds of model building with Quanta and refinement with cnx.

[0542] Core interaction interface amino acids were determined as being all amino acid residues with at least one atom less than or equal to 5 Å from the PCSK9 partner protein. 5 Å was chosen as the core region cutoff distance to allow for atoms within a van der Waals radius plus a possible water-mediated hydrogen bond. Boundary interaction interface amino acids were determined as all amino acid residues with at least one atom less than or equal to 8 Å from the PCSK9 partner protein but not included in the core interaction list. Less than or equal to 8 Å was chosen as the boundary region cutoff distance to allow for the length of an extended arginine amino acid. Amino acids that met these distance criteria were calculated with the program PyMOL. (DeLano, W.L. The PyMOL Molecular Graphics System. (Palo Alto, 2002)).

EXAMPLE 36

Cyrstal Structure of PCSK9 and 31A4

[0543] The crystal structure of the 31A4/PCSK9 complex was deteremined.

Expression and purification of protein samples

[0544] PCSK9 449TEV (a PCSK9 construct with a TEV protease cleavage site inserted between residue 449 and 450, numbering according to SEQ ID NO: 3) was expressed in baculovirus infected Hi-5 insect cells with an N-terminal honeybee melittin signal peptide followed by a His_6 tag. The PCSK9 protein was purified by first by nickel affinity chromatography. TEV protease was used to remove the melittin-His_6 tag and cleave the PCSK9 protein between the catalytic domain and V domain. The V domain was further purified by ion exchange chromatography and size exclusion chromatography. The 31A4 Fab fragment was expressed in *E. coli*. This protein was purified by nickel affinity chromatography, size exclusion chromatography and ion exchange chromatography.

Complex formation and crystallization

[0545] The PCSK9 V domain / 31A4 complex was made by mixing a 1.5 molar excess of PCSK9 V domain with 31A4 Fab. The complex was separated from excess PCSK9 V domain by purification on a size exclusion chromatography column. The PCSK9 V domain / 31A4 complex crystallized in 1.1 M Succinic acid pH 7, 2% PEG MME 2000.

Data collection and structure determination

[0546] The dataset for the PCSK9 V domain / 31A4 crystal was collected on a Rigaku FR-E x-ray source and processed with denzo/scalepack (Otwinowski, Z., Borek, D., Majewski, W. & Minor, W. Multiparametric scaling of diffraction intensities. *Acta Crystallogr A* 59, 228-34 (2003)).

[0547] PCSK9 V domain / 31A4 crystals grow in the $P2_12_12_1$ space group with unit cell dimensions a=74.6, b=131.1, c=197.9 Å with two complex molecules per asymmetric unit, and diffract to 2.2 Å resolution. The PCSK9 V domain / 31A4 structure was solved by molecular replacement with the program MOLREP (CCP4. The CCP4 suite: programs for protein crystallography. *Acta Crystallogr D Biol Crystallogr* 50, 760-3 (1994)) using the V domain of the PCSK9 structure (Piper, D.E. et al. The crystal structure of PCSK9: a regulator of plasma LDL-cholesterol. *Structure* 15, 545-52 (2007)) as the starting search model. Keeping the PCSK9 450-692 solution fixed, an antibody variable domain was used as a search model. After initial refinement, the antibody constant domains were fit by hand. The complete structure was

improved with multiple rounds of model building with Quanta and refinement with cnx (Brunger, A.T. et al. Crystallography & NMR system: A new software suite for macromolecular structure determination. *Acta Crystallogr D Biol Crystallogr* 54, 905-21 (1998)).

[0548] Core interaction interface amino acids were determined as being all amino acid residues with at least one atom less than or equal to 5 Å from the PCSK9 partner protein. 5 Å was chosen as the core region cutoff distance to allow for atoms within a van der Waals radius plus a possible water-mediated hydrogen bond. Boundary interaction interface amino acids were determined as all amino acid residues with at least one atom less than or equal to 8 Å from the PCSK9 partner protein but not included in the core interaction list. Less than or equal to 8 Å was chosen as the boundary region cutoff distance to allow for the length of an extended arginine amino acid. Amino acids that met these distance criteria were calculated with the program PyMOL (DeLano, W.L. The PyMOL Molecular Graphics System. (Palo Alto, 2002)). Distances were calculated using the V domain "A" and 31A4 "L1,H1" complex.

[0549] The crystal structure of the PCSK9 V domain bound to the Fab fragment of 31A4 was determined at 2.2 Å resolution. The depictions of the crystal structure are provided in FIGs. 21A-21D. FIGs. 21A-21C shows that the 31A4 Fab binds to the PCSK9 V domain in the region of subdomains 1 and 2.

[0550] A model of full length PCSK9 bound the 31A4 Fab was made. The structure of full length PCSK9 was overlaid onto the PCSK9 V domain from the complex. A figure of this model is shown in FIG. 21D. The site of the interaction between the EGFa domain of the LDLR and PCSK9 is highlighted.

[0551] Analysis of the structure shows where this antibody interacts with PCSK9 and demonstrated that antibodies that do not bind to the LDLR binding surface of PCSK9 can still inhibit the degradation of LDLR that is mediated through PCSK9 (when the results are viewed in combination with Example 40 and 41 below). In addition, analysis of the crystal structure allows for identification of specific amino acids involved in the interaction between PCSK9 and the 31A4 antibody. Furthermore, the core and boundary regions of the interface on the PCSK9 surface were also determined. Specific core PCSK9 amino acid residues of the interaction interface with 31A4 were defined as PCSK9 residues that are within 5 Å of the 31A4 protein. The core residues are T468, R469, M470, A471, T472, R496, R499, E501, A502, Q503, R510, H512, F515, P540, P541, A542, E543, H565, W566, E567, V568, E569, R592, and E593.

Boundary PCSK9 amino acid residues of the interaction interface with 31A4 were defined as PCSK9 residues that are 5-8 Å from the 31A4 protein. The boundary residues are as follows: S465, G466, P467, A473, I474, R476, G497, E498, M500, G504, K506, L507, V508, A511, N513, A514, G516, V536, T538, A539, A544, T548, D570, L571, H591, A594, S595, and H597. Amino acid residues nearly or completely buried within the PCSK9 protein are highlighted by underline. As noted herein, the numbering references the amino acid positions of SEQ ID NO: 3 (adjusted as noted herein).

[0552] Specific core 31A4 amino acid residues of the interaction interface with PCSK9 were defined as 31A4 residues that are within 5 Å of the PCSK9 protein. The core residues for the 31A4 antibody are as follows: Heavy Chain: G27, S28, F29, S30, A31, Y32, Y33, E50, N52, H53, R56, D58, K76, G98, Q99, L100, and V101; Light Chain: S31, N32, T33, Y50, S51, N52, N53, Q54, W92, and D94. Boundary 31A4 amino acid residues of the interaction interface with PCSK9 were defined as 31A4 residues that are 5-8 Å from the PCSK9 protein. The boundary residues for 31A4 are as follows: Heavy Chain: V2, G26, W34, N35, W47, I51, S54, T57, Y59, A96, R97, P102, F103, and D104; Light Chain: S26, S27, N28, G30, V34, N35, R55, P56, K67, V91, D93, S95, N97, G98, and W99.

[0553] The crystal structure also displayed the spatial requirements of this ABP in its interaction with PCSK9. As shown in this structure, surprisingly, antibodies that bind to PCSK9 without directly preventing PCSK9's interaction with the LDLR can still inhibit PCSK9's function.

[0554] In some embodiments, any antigen binding protein that binds to, covers, or prevents 31A4 from interacting with any of the above residues can be employed to bind to or neutralize PCSK9. In some embodiments, the ABP binds to or interacts with at least one of the following PCSK9 (SEQ ID NO: 3) residues: T468, R469, M470, A471, T472, R496, R499, E501, A502, Q503, R510, H512, F515, P540, P541, A542, E543, H565, W566, E567, V568, E569, R592, and E593. In some embodiments, the ABP is within 5 angstroms of one or more of the above residues. In some embodiments, the ABP binds to or interacts with at least one of the following PCSK9 (SEQ ID NO: 3) residues: S465, G466, P467, A473, I474, R476, G497, E498, M500, G504, K506, L507, V508, A511, N513, A514, G516, V536, T538, A539, A544, T548, D570, L571, H591, A594, S595, and H597. In some embodiments, the ABP is 5 to 8 angstroms

from one or more of the above residues. In some embodiments, the ABP interacts, blocks, or is within 8 angstroms of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 25, 30, 35, 40, 45, or 50 of the above residues.

[0555] The coordinates for the crystal structures discussed in the above Examples are are presented in Table 35.1 (full length PCSK9 and 31H4), Table 35.2 (PCSK9 and EGFa), Table 35.3 (PCSK9, 31H4, and 21B12), and Table 35.4 (PCSK9 and 31A4). Antigen binding proteins and molecules that interact with the relevant areas or residues of the structure of PCSK9 (including those areas or residues within 15, 15-8, 8, 8-5, 5, or fewer angstroms from where EGFa, or the antibodies, interact with PCSK9) depicted in the figures and/or their corresponding positions on the structures from the coordinates are also contemplated.

[0556] The antibodies that are described in the coordinates were raised in E. coli and thus possess some minor amino acid differences from the fully human antibodies. The first residue in the variable region was a glutamic acid instead of a glutamine for the heavy and light chains of 21B12 and for the light chain for 31H4. In addition to the differences in the sequence of variable region, there were also some differences in the constant region of the antibodies described by the coordinates (again due to the fact that the antibody was raised in E. coli). FIG. 22 highlights (via underlining shading, or bold) the differences between the constant regions of the 21B12, 31H4, and 31A4 Fabs (raised in E. coli) when compared to SEQ ID NOs: 156, and 155. For 21B12 31H4, and 31A4, the light chain constant sequence is similar to human lambda (SEQ ID NO: 156). The underlined glycine residue is an insertion between where the 21B12 and 31H4 variable sequences stop and the lambda sequence starts.

[0557] For both 21B12 and 31H4, the heavy chain constant is similar to human IgG4 (SEQ ID NO: 155). The highlighted differences in FIG. 22 are shown in Table 36.1:

Table 36.1

Crystal SEQ	ID NO: 155
S	C
K	R
G	E
G	S
Q	K
I	T
N	D
K	R
P	S

[0558] In regard to 31A4, while it also has the same distinctions noted above, there are three additional differences. As shown in FIG. 22, there are two additional amino acids at the start, which comes from incomplete processing of the signal peptide in E. coli expression. In addition, there is one additional substitution in the 31A4 heavy chain constant region when compared to SEQ ID NO: 155, which is the adjustment of a L (in SEQ ID NO: 155) to a H. Finally, 31A4 does have a glutamine as the initial amino acid of the Fab, rather than the adjustment to glutamic acid noted above for 21B12 and 31H4.

[0559] For all three antibodies, the end of the heavy chain (boxed in dark grey) differs as well, but the amino acids are not ordered in the structure so they do not appear in the cooridnates. As will be appreciated by one of skill in the art, his-tags are not a required part of the ABP and should not be considered as part of the ABP's sequence, unless explicitly called out by reference to a specific SEQ ID NO that includes a histidine tag and a statement that the ABP sequence "includes the Histidine tag."

EXAMPLE 37
Epitope Mapping--Binning

[0560] An alternative set of binning experiments was conducted in addition to the set in Example 10. As in Example 10, ABPs that compete with each other can be thought of as binding to the same site on the target and in common parlance are said to "bin" together.

[0561] A modification of the Multiplexed Binning method described by Jia, et al (J. Immunological Methods, 288 (2004) 91-98) was used. Individual bead codes of streptavidin-coated Luminex beads was incubated in 100ul 0.5 ug/ml biotinylated monovalent mouse-anti-human IgG capture antibody (BD Pharmingen, #555785) for 1 hour at room temperature in the dark, then washed 3x with PBSA, phosphate buffered saline (PBS) plus 1% bovine serum albumin (BSA). Each bead code was separately incubated with 100 ul 2 ug/ml anti-PCSK9 antibody (Coating Antibody) for 1 hour then washed 3x with PBSA. The beads were pooled then dispensed to a 96-well filter plate (Millipore, #MSBVN1250). 100ul of 2 ug/ml purified PCSK9 protein was added to half the wells. Buffer was added to the other half as control. The reaction was incubated for 1 hour then washed. 100 ul of a 2 ug/ml anti-PCSK9 antibody (Detection Ab) was added to all the wells, incubated for 1 hour then washed. An irrelevant human-IgG (Jackson, #009-000-003) was run as another control. 20ul PE-conjugated

monovalent mouse-anti-human IgG (BD Pharmingen, #555787) was added to each well and incubated for 1 hour then washed. Beads were resuspended in 100ul PBSA and a minimum of 100 events/bead code were collected on the BioPlex instrument (BioRad).

[0562] Median Fluorescent Intensity (MFI) of the antibody pair without PCSK9 was subtracted from signal of the corresponding reaction containing PCSK9. For the antibody pair to be considered bound simultaneously, and therefore in different bins, the subtracted signal had to be greater than 3 times the signal of the antibody competing with itself and the 3 times the signal of the antibody competing with the irrelevant antibody.

[0563] The data from the above is depicted in FIGs. 23A-23D. The ABPs fell into five bins. The shaded boxes indicate ABPs that can bind simultaneously to PCSK9. The nonshaded boxes indicate those ABPs that compete with each other for binding. A summary of the results is shown in Table 37.1.

Table 37.1.

BIN 1	BIN 2	BIN 3	BIN 4	BIN 5
01A12.2	27B2.1	16F12.1	11G1.5	30A4.1
03B6.1	27B2.5	22E2.1	03C4.1	13B5.1
09C9.1	12H11.1	27A6.1		13H1.1
17C2.1		28B12.1		31A4.1
21B12.2		28D6.1		31B12.1
23G1.1		31G11.1		
25G4.1		31H4.1		
26E10.1		08A1.2		
11H4.1		08A3.1		
11H8.1		11F1.1		
19H9.2				
26H5.1				
27E7.1				
27H5.1				
30B9.1				
02B5.1				
23B5.1				
27B2.6				
09H6.1				

[0564] Bins 1 (competes with ABP 21B12) and 3 (competes with 31H4) are exclusive of each other; bin 2 competes with bins 1 and 3; and Bin 4 does not compete with bins 1 and 3. Bin 5, in this example, is presented as a "catch all" bin to describe those ABPs that do not fit into the other bins. Thus, the above identified ABPs in each of the binds are representative of different types of epitope locations on PCSK9, some of which overlap with each other.

[0565] As will be appreciated by one of skill in the art, if the reference ABP prevents the binding of the probe ABP then the antibodies are said to be in the same bin. The order in which the ABPs are employed can be important. If ABP A is employed as the reference ABP and blocks the binding of ABP B the converse is not always true: ABP B used as the reference ABP will not necessarily block ABP A. There are a number of factors in play here: the binding of an ABP can cause conformational changes in the target which prevent the binding of the

second ABP, or epitopes which overlap but do not completely occlude each other may allow for the second ABP to still have enough high-affinity interactions with the target to allow binding. ABPs with a much higher affinity may have a greater ability to bump a blocking ABP out of the way. In general, if competition is observed in either order the ABPs are said to bin together, and if both ABPs can block each other then it is likely that the epitopes overlap more completely.

EXAMPLE 38

Epitope Mapping—Western Blot

[0566] The present example demonstrates whether or not the epitopes for the examined ABPs were linear or conformational. Denaturing reducing and denaturing non-reducing western blots were run to determine which antibodies have a conformational epitope. Antibodies that bind to a denaturing reducing western blot have a linear epitope and are not conformational. The results are presented in FIG. 24A and FIG. 24B. For the blot, 0.5 ug/lane of purified full-length human PCSK9 was run on a 4-12% NuPAGE Bis-Tris gel and MES SDS Running Buffer. 1 ug/ml anti-PCSK9 antibodies, except 0.5 ug/ml 31G11, were used to probe the blot. 1:5000 donkey-anti-human-IR700 secondary was used and read on a LiCOR instrument. Antibody 13H1 bound to a linear epitope on the pro-domain of PCSK9. All other antibodies displayed results that were consistent with conformational epitopes. These gels split apart the pro-domain from the rest of the protein, and the pro domain ran at about 15kDa. In addition, 3C4 and 31A4 appeared to bind to conformational epitopes which were preserved by disulfide bonds, as these antibodies bound to PCSK-9 under denaturing conditions where the disulfide bonds had been preserved (left) but reducing the samples (right) eliminated binding.

EXAMPLE 39

Epitope Mapping--Arginine / Glutamic Acid Scanning

[0567] Representative ABPs from each bin (from Example 37) were selected for further epitope analysis. An arginine/glutamic acid-scanning strategy was performed for mapping ABP binding to PCSK9. By way of background, this method determines if a residue is part of the structural epitope, meaning those residues in the antigen which contact or are buried by the antibody. Arginine and glutamic acid sidechains are charged and bulky and can disrupt antibody binding even if the mutated residue is not directly involved in antibody binding.

Residue Selection

[0568] The crystal structure of PCSK9 was used to select the residues to be mutated for epitope mapping. The method used to choose residues to mutate involved both computational mechanisms and interactive structure analysis. The PCSK9 structure contained gaps of missing residues and was missing 30 amino acids in the N- (i.e., the signal sequence) and 10 amino acids in the C-termini. The internal missing residues were modeled onto the structure, but the N- and C-terminal missing residues were not. The solvent exposure ratio for each residue was calculated: the surface area of each residue in the context of the protein (SA1) was divided by the surface area of the residue in a trimer with flanking glycines (SA2) with a conserved backbone structure. Residues with solvent exposure ratio greater than 10% (R10) were selected as well as the 40 missing terminal residues. From these, prolines and glycines with positive Φ angles were excluded to reduce the possibility of misfolding. The number of residues to be mutated in the V domain was reduced by using a solvent exposure ratio of 37% along with visual inspection of the entire protein to bring the total number of mutations to 285. Various orientations of the surface of PCSK9 with these various classes identifies are shown in FIG. 25A-25F. In these figures, lightest gray denotes areas that were not selected or were deselected. darker gray denotes those residues selected).

Cloning and Expression

[0569] Once the residues to be altered were identified, the various residues were altered. Human PCSK9 was cloned into the pTT5 vector with a C-terminal Flag-His tag. Mutants were made from this original construct by site-directed mutagenesis using a QuikChange II kit from Stratagene. Sense and anti-sense oligonucleotides used for mutagenesis were designed using Amgen's MutaGenie software. All PCSK9 constructs were expressed in transiently-transfected 293-6E cells in 24-well plates and re-racked into three 96-well plates with a non-mutated PCSK9 control (wild-type, WT) in each plate. Expression levels and integrity of the recombinant proteins in conditioned media were checked by Western blot. Of the 285 mutants originally selected, 41 failed in cloning or expression. 244 mutants were used for epitope mapping. An alignment of the PCSK9 parent sequence and a representative PCSK9 sequence with the 244 mutated residues is shown in FIG. 26. Separate constructs were made containing a single mutation. For the purposes of the epitope sequences and the epitope based

inventions involving changes in binding, the sequences are provided in reference to SEQ ID NO: 1 and/or SEQ ID NO: 303. The sequences in FIG. 26 were the sequences used for the present binding epitope studies. One of skill in the art will appreciate that the present results apply to other PCSK9 variants disclosed herein as well (*e.g.*, SEQ ID NO: 1 and 3, as well as the other allelic variants).

[0570] Five antibodies, a representative of each bin, were chosen for fine epitope mapping. They were 21B12, 31H4, 12H11, 31A4, 3C4. All conformational epitope antibodies. Three, 21B12, 31H4, and 31A4 were also crystallized with PCSK9, as described above.

Structural and functional epitopes

[0571] Epitopes can be further defined as structural or functional. Functional epitopes are generally a subset of the structural epitopes and have those residues that directly contribute to the affinity of the interaction (e.g. hydrogen bonds, ionic interactions). Structural epitopes can be thought of as the patch of the target which is covered by the antibody.

[0572] The scanning mutagenesis employed was an arginine and glutamic acid scan. These two sidechains were chosen due to their large steric bulk and their charge, which allows mutations that occur in the structural epitope to have a greater effect on antibody binding. Arginine was generally employed except when the WT reside was arginine, and in these cases the residue was mutated to glutamic acid to switch the charge.

[0573] For the purpose of epitope mapping, a bead-based multiplexed assay was used to measure antibody binding to PCSK9 and PCSK9 mutants simultaneously. Antibody binding to mutants was then compared to its binding to the wild-type in the same well. The variants were split into three groups: Group 1: 81 variants + 2 wt controls + 1 negative control + 1 other PCSK9 supernatant; Group 2: 81 variants + 2 wt controls + 2 negative controls; and Group 3: 82 variants + 2 wt control + 1 negative control.

[0574] The assay was run as follows: 85 sets of color-coded strepavidin-coated LumAvidin beads (Luminex) were bound with biotinylated anti-pentaHis antibody (Qiagen, #1019225) for 1 hour at room temperature (RT) then washed three times in PBS, 1% BSA, 0.1% Tween 20. Each color-coded bead set was then allowed to bind to a PCSK9 mutant, wild-type, or negative control in 150 ul supernatant overnight at 4°C

[0575] The color-coded bead sets, each associated to a specific protein, were washed and pooled. At this point, there were 3 pools of 85 bead sets, one pool for each group of mutants and controls. The beads from each pool were aliquoted to 24 wells (3 columns) of a 96-well filter plate (Millipore, #MSBVN1250). 100 ul of anti-PCSK9 antibodies in 4-fold dilutions were added to nine columns for triplicate points and incubated for 1 hour at RT and washed. 100ul of 1:200 dilution phycoerythrin (PE)-conjugated anti-human IgG Fc (Jackson Immunoresearch, #109-116-170) was added to each well and incubated for 1 hour at RT and washed.

[0576] Beads were resuspended in 1% BSA in PBS, shaken for 10mins and read on the BioPlex instrument (Bio-Rad). The instrument identifies each bead by its color-code thereby identifying the specific protein associated with the color code. At the same time, it measures the amount of antibody bound to the beads by fluorescence intensity of the PE dye. Antibody binding to each mutant can then be compared directly its binding to the wild type in the same pool. IL-17R chimera E was used as a negative control. A summary of all of the mutants examined is shown in Table 39.1 (with reference to the sequence numbering used in FIG. 1A and 26).

Table 39.1

	1	2	3	4	5	6	7	8	9	10	11	12
A	WT PCSK9	Y8R	E18R	P26R	A38R	T56R	A70R	H83R	E102R	L128R	D145R	
B	Q1R	E9R	E19R	E27R	K39R	H57R	Q71R	V84R	L105R	E129R	S148R	
C	E2R	E10R	D20R	G29R	D40R	L58R	A73R	H86R	K106R	R130E	pcsk9 supe test	
D	D3R	L11R	G21R	T30R	L44R	Q60R	R74E	K95R	H109R	T132R	IL17R chimera E	
E	E4R	V12R	L22R	T31R	T47R	E62R	R75E	S97R	D111R	D139R	WT PCSK9	
F	D5R	A14R	A23R	A32R	K53R	R63E	Y77R	G98R	A121R	E140R		
G	G6R	L15R	E24R	T33R	E54R	R66E	L78R	D99R	S123R	Y141R		
H	D7R	S17R	A25R	H35R	E55R	R67E	L82R	L101R	W126R	Q142R		

	1	2	3	4	5	6	7	8	9	10	11	12
A	WT PCSK9	M171R	E181R	Q189R	K213R	R242E	G251R	L294R	L321R	Q352R	E380R	
B	L149R	V172R	D182R	A190R	G214R	K243R	G262R	A311R	E336R	M368R	R384E	
C	S158R	T173R	G183R	S191R	S216R	S244R	R265E	Q312R	D337R	S371R	IL17R chimera E	
D	Q160R	D174R	T184R	K192R	R221E	Q245R	A269R	D313R	D344R	A372R	IL17R chimera E	
E	S161R	E176R	R185E	S195R	Q226R	L246R	Q272R	Q314R	T347R	E373R	WT PCSK9	
F	D162R	N177R	F186R	H196R	K228R	V247R	R276E	T317R	F349R	E375R		
G	R164E	V178R	H187R	R207E	T230R	Q248R	A277R	L318R	V350R	T377R		
H	E167R	E180R	R188E	D208R	F240R	V250R	R289E	T320R	S351R	L378R		

	1	2	3	4	5	6	7	8	9	10	11	12
A	WT PCSK9	N396R	V405R	W423R	R446E	E513R	Q525R	Q554R	Q589R	S632R	A641R	
B	I386R	E396R	N409R	Q424R	D450R	A514R	E537R	N556R	Q591R	T633R	R650E	
C	H387R	A397R	A413R	A433R	A472R	S515R	V538R	K579R	A595R	T634R	R652E	
D	F388R	W398R	S417R	H434R	F485R	M516R	E539R	V580R	E597R	G635R	IL17R chimera E	
E	A390R	E401R	T418R	T438R	G486R	R519E	L541R	K581R	E598R	S636R	WT PCSK9	
F	K391R	D402R	H419R	R439E	E488R	H521R	H544R	E582R	V620R	T637R		
G	D392R	Q403R	G420R	M440R	N503R	H523R	V548R	H583R	R629E	S638R		
H	V393R	R404E	A421R	T442R	T508R	Q524R	R552E	G584R	V631R	E639R		

Bead Variability Study

[0577] Before running the epitope mapping binding assay, a validation experiment was conducted to assess the "bead region" to "bead region" (B-B) variability. In the validation experiment, all beads were conjugated with the same wild type control protein. Therefore, the difference between beads regions was due to purely B-B variance and was not confounded by difference between wild type and mutant proteins. The titration of antibody was run with twelve replications in different wells.

[0578] The objective of this statistical analysis was to estimate the B-B variability of the estimated EC50 of binding curves. The estimated B-B standard deviation (SD) was then used to build the EC50 confidence intervals of wild type and mutant proteins during curve comparison experiments.

[0579] A four-parameter logistic model was fitted to the binding data for each bead region. The resulting file, containing curve quality control (QC) results and parameter estimates

for top (max), bottom (min), Hillslope (slope), and natural log of EC50 (xmid) of the curves, was used as the raw data for the analysis. B-B variability for each parameter was then estimated by fitting mixed effect model using SAS PROC MIXED procedure. Only curves with "good" QC status were included in the analysis. The final mixed effect model included only residual (i.e. individual bead regions) as random effect. Least squares means (LS-mean) for each parameter were estimated by the mixed effect model as well. B-B SD was calculated by taking square root of B-B variance. Fold change between LS-mean + 2SD and LS-mean - 2SD, which represent approximately upper and lower 97.5 percentile of the population, was also calculated. The results are displayed in Table 39.2

Table 39.2 Least square mean and bead-to-bead variance estimations

Assay ID	parname	Ls Mean	B-B Variance	-2SD	+2SD	Fold Change*
PCSK9	max	15000	997719	13002.3	16997.7	1.3
PCSK9	min	162.09	1919.66	74.5	249.7	3.4
PCSK9	slope	0.8549	0.000599	0.8	0.9	1.1
PCSK9	xmid	3.1715	0.002098	3.1	3.3	1.2

* xmid is natural log of the EC50. Fold change for xmid was converted back to original scale.

Identifying Residues in the Structural Epitope

[0580] A residue was considered part of the structural epitope (a "hit") when mutating it to arginine or glutamic acid alters antibody binding. This is seen as a shift in the EC50 or a reduction of maximum signal compared to antibody binding to wild type. Statistical analyses of antibody binding curves to wild type and mutants were used to identify statistically significant EC50 shifts. The analysis takes into consideration variation in the assay and curve fitting.

Hit Identification based on EC50 Comparison

[0581] The EC50 and Bmax values were generated from a Weighted 4-Parameter Logistical model fitted to the binding data using S-PLUS with VarPower software (Insightful Corporation, Seattle WA). The EC50s of the mutant binding curves and wild type binding curves were compared. Statistically significant differences were identified as hits for further consideration. The curves with "nofit" or "badfit" flags were excluded from the analysis.

The Variations in EC50 Estimates

[0582] Two sources of variations were considered in the comparison of EC50 estimates, variation from the curve fit and the bead-bead variation. Wild types and mutants were linked to different beads, hence their difference are confounded with the bead-bead difference (described above). The curve fit variation was estimated by the standard error of the log EC50 estimates. Bead-bead variation was experimentally determined using an experiment where wild type controls were linked to each one of the beads (described above). The bead variation in EC50 estimates of wild type binding curve from this experiment was used to estimate the bead-bead variation in the actual epitope mapping experiment.

Testing for EC50 Shift between Mutants and Wild Type

[0583] The comparisons of two EC50s (in log scale) was conducted using Student's t-test. The t-statistic was calculated as the ratio between delta (the absolute differences between EC50 estimates) and the standard deviation of delta. The variance of delta was estimated by the sum of the three components, variance estimate of EC50 for mutant and wild type curves in the nonlinear regression and two times the bead-bead variance estimated from a separate experiment. The multiple of two for the bead-bead variance was due to the assumption that both mutant and wild type beads had the same variance. The degree of freedom of the standard deviation of delta was calculated using the Satterthwaite's (1946) approximation. Individual p-values and confidence intervals (95% and 99%) were derived based on Student's t distribution for each comparison. In the case of multiple wild type controls, a conservative approach was taken by picking the wild type control that was most similar to the mutant, i.e., picking the ones with the largest p-values.

[0584] Multiplicity adjustments were important to control the false positive(s) while conducting a large number of tests simultaneously. Two forms of multiplicity adjustment were implemented for this analysis: family wise error (FWE) control and false discovery rate (FDR) control. The FWE approach controls the probability that one or more hits are not real; FDR approach controls the expected proportion of false positive among the selected hits. The former approach is more conservative and less powerful than the latter one. There are many methods available for both approaches, for this analysis, the Hochberg's (1988) method for FWE analysis

and Benjamini-Hochberg's (1995) FDR method for FDR analysis were selected. Adjusted p-values for both approaches were calculated.

Results

EC50 Shift

[0585] Mutations whose EC50 is significantly different from wild type, e.g., having a False Discovery Rate adjusted p-value for the whole assay of 0.01 or less, were considered part of the structural epitope. All the hits also had a Familywise type I error rate adjusted p-value for each antibody of less than 0.01 except residue R185E for antibody 31H4 which had an FWE adjusted p-value per antibody of 0.0109. The residues in the structural epitope of the various antibodies determined by EC50 shift are shown in Table 39.3 (point mutations are with reference to SEQ ID NO: 1 and 303)

Table 39.3

Antibody	Mutation	FDR Adjusted Pval	FWE Adjusted By Pval	Low99	Low95	FoldChange	High95	High99	RawPval
21B12	D208R	0.0000	0.0000	0.3628	0.3844	0.4602	0.5509	0.5837	0.0000
21B12	R207E	0.0000	0.0000	1.7148	1.8488	2.3191	2.9090	3.1364	0.0000
31H4	R185E	0.0024	0.0109	1.2444	1.3525	1.7421	2.2439	2.4388	0.0000
31A4	E513R	0.0001	0.0003	1.4764	1.6219	2.1560	2.8660	3.1485	0.0000
31A4	E539R	0.0000	0.0000	1.6014	1.7461	2.2726	2.9578	3.2252	0.0000
31A4	R439E	0.0000	0.0000	3.1565	3.6501	5.5738	8.5113	9.8420	0.0000
31A4	V538R	0.0004	0.0013	1.4225	1.5700	2.1142	2.8471	3.1423	0.0000
12H11	A390R	0.0000	0.0001	1.4140	1.5286	1.9389	2.4594	2.6588	0.0000
12H11	A413R	0.0009	0.0028	1.2840	1.3891	1.7653	2.2434	2.4269	0.0000
12H11	S351R	0.0009	0.0028	1.2513	1.3444	1.6761	2.0896	2.2452	0.0000
12H11	T132R	0.0000	0.0001	1.3476	1.4392	1.7631	2.1599	2.3068	0.0000
3C4	E582R	0.0016	0.0069	1.3523	1.5025	2.0642	2.8359	3.1509	0.0000

Maximum Signal Reduction

[0586] The percent maximum signal was calculated using the maximum signal from the curve fitting (BmaxPerWT) and raw data point (RawMaxPerWT). Mutations that reduced the antibody binding maximum signal by ≥ 70% as compared to to wild type signal or that reduced the signal of one antibody compared to other antibodies by >50% when all other antibodies are at least 40% of wild type were considered hits and part of the epitope. Table

39.4 displays the residues that are in the structural epitope (*italics*) as determined by reduction of maximum signal.

Table 39.4

antibody	Mutants	BmaxPerWT	RawMaxPerWT
21B12	A311R	141.6388	139.7010
31H4	A311R	145.2189	147.8244
31A4	A311R	103.4377	96.2214
12H11	*A311R*		*14.9600*
3C4	A311R	129.0460	131.2060
21B12	*D162R*		*7.0520*
31H4	D162R	108.8308	112.4904
31A4	D162R	98.8873	95.9268
12H11	D162R	94.6280	97.4928
3C4	D162R	101.4281	100.1586
21B12	D313R	45.8356	45.0011
31H4	D313R	45.6242	44.9706
31A4	D313R	47.9728	44.7741
12H11	*D313R*	*16.1811*	*16.4262*
3C4	D313R	58.5269	57.6032
21B12	D337R	61.9070	62.2852
31H4	D337R	63.1604	64.1029
31A4	D337R	62.9124	59.4852
12H11	*D337R*		*10.8443*
3C4	D337R	73.0326	73.9961
21B12	E129R	139.9772	138.9671
31H4	E129R	141.6792	139.1764
31A4	E129R	77.3005	74.8946
12H11	*E129R*	*28.6398*	*29.3751*
3C4	E129R	85.7701	85.7802

antibody	Mutants	BmaxPerWT	RawMaxPerWT
21B12	*E167R*		*15.1082*
31H4	E167R	127.4479	128.2698
31A4	E167R	115.3403	112.6951
12H11	E167R	111.0979	109.6813
3C4	E167R	109.3223	108.7864
21B12	H521R	133.8480	133.9791
31H4	H521R	130.2068	128.4879
31A4	H521R	124.5091	129.3218
12H11	H521R	130.7979	134.4355
3C4	*H521R*		*22.1077*
21B12	Q554R	125.9594	125.2103
31H4	Q554R	122.2045	128.7304
31A4	Q554R	113.6769	121.3369
12H11	Q554R	116.1789	118.4170
3C4	*Q554R*		*31.8416*
21B12	*R164E*	*17.3807*	*19.8505*
31H4	R164E	97.8218	99.6673
31A4	R164E	98.2595	96.3352
12H11	R164E	88.0067	89.8807
3C4	R164E	105.0589	105.7286
21B12	R519E	139.4598	141.2949
31H4	R519E	135.5609	140.0000
31A4	R519E	134.2303	137.1110
12H11	R519E	135.4755	137.0824
3C4	*R519E*		*44.0091*
21B12	S123R	87.6431	88.1356
31H4	S123R	85.5312	84.7668
31A4	S123R	68.4371	66.6131
12H11	*S123R*	*20.8560*	*20.6910*
3C4	S123R	73.6475	71.5959

(Point mutations are with reference to SEQ ID NO: 1 and FIG. 26).

[0587] Table 39.5 displays a summary of all of the hits for the various antibodies.

Table 39.5

EC50 shift hits					Bmax shift hits				
21B12	31H4	31A4	12H11	3C4	21B12	31H4	31A4	12H11	3C4
R207E	R185E	R439E	T132R	E582R	D162R			S123R	R519E
D208R*		E513R	S351R		R164E			E129R	H521R
		V538R	A390R		E167R			A311R	Q554R
		E539R	A413R					D313R	
								D337R	

* decreases EC50

[0588] To further examine how these residues form part of or all of the relevant epitopes, the above noted positions were mapped onto various crystal structure models, the results are shown in FIG. 27A through 27E. FIG. 27A depicts the 21B12 epitope hits, as mapped onto a crystal structure of PCSK9 with the 21B12 antibody. The structure identifies PCSK9 residues as follows: light gray indicates those residues that were not mutated (with the exception of those residues that are explicitly indicated on the structure) and darker gray indicates those residues mutated (a minority of which failed to express). Residues that are explicitly indicated were tested (regardless of the shading indicated on the figure) and resulted in a significant change in EC50 and/or Bmax The epitope hits were based on Bmax shift. In this figure, 31H4 is behind 21 B12.

[0589] FIG. 27B depicts the 31H4 epitope hits, as mapped onto a crystal structure of PCSK9 with 31H4 and 21B12 antibodies. The structure identifies PCSK9 residues as follows: light gray indicates those residues that were not mutated (with the exception of those residues that are explicitly indicated on the structure) and darker gray indicates those residues mutated (a minority of which failed to express). Residues that are explicitly indicated were tested (regardless of the shading indicated on the figure) and resulted in a significant change in EC50 and/or Bmax . The epitope hits were based on the EC50 shift.

[0590] FIG. 27C depicts the 31A4 epitope hits, as mapped onto a crystal structure of PCSK9 with 31H4 and 21B12 antibodies. The structure identifies PCSK9 residues as follows: light gray indicates those residues that were not mutated (with the exception of those residues that are explicitly indicated on the structure) and darker gray indicates those residues mutated (a minority of which failed to express). Residues that are explicitly indicated were tested

(regardless of the shading indicated on the figure) and resulted in a significant change in EC50 and/or Bmax. The epitope hits were based on the EC50 shift. 31A4 antibody is known to bind to the V-domain of PCSK9, which appears consistent with the results presented in FIG. 27C.

[0591] FIG. 27D depicts the 12H11 epitope hits, as mapped onto the crystal structure of PCSK9 with 31H4 and 21B12 antibodies. The structure identifies PCSK9 residues as follows: light gray indicates those residues that were not mutated (with the exception of those residues that are explicitly indicated on the structure) and darker gray indicates those residues mutated (a minority of which failed to express). Residues that are explicitly indicated were tested (regardless of the shading indicated on the figure) and resulted in a significant change in EC50 and/or Bmax. 12H11 competes with 21B12 and 31H4 in the binning assay described above.

[0592] FIG. 27E depicts the 3C4 epitope hits, as mapped onto the crystal structure of PCSK9 with 31H4 and 21B12 antibodies. The structure identifies PCSK9 residues as follows: light gray indicates those residues that were not mutated (with the exception of those residues that are explicitly indicated on the structure) and darker gray indicates those residues mutated (a minority of which failed to express). Residues that are explicitly indicated were tested (regardless of the shading indicated on the figure) and resulted in a significant change in EC50 and/or Bmax.

[0593] 3C4 does not compete with 21B12 and 31H4 in the binning assay. 3C4 binds to the V-domain in the domain binding assay (see results from Example 40, FIGs. 28A and 28B).

[0594] While there were approximately a dozen mutants that could have been expected to have an effect on binding (based upon the crystal structure), the present experiment demonstrated that, surprisingly, they did not. As will be appreciated by one of skill in the art, the results presented above are in good agreement with the crystal structures and PCSK-9's binding of these antibodies. This demonstrates that the provided structural and corresponding functional data adequately identifies the key residues and areas of interaction of the neutralizing ABPs and PCSK9. Thus, variants of the ABPs that possess the ability to bind to the above noted areas are adequately provided by the present description.

[0595] As will be appreciated by one of skill in the art, while the B-max drop and EC50 shift hits can be considered manifestations of the same phenomenon, strictly speaking, a B-max drop alone does not reflect a loss of affinity per se but, rather, the destruction of some percentage of the epitope of an antibody. Although there is no overlap in the hits determined by

B-max and EC50, mutations with a strong affect on binding may not allow for the generation of a useful binding curve and hence, no EC50 can be determined for such variants.

[0596] As will be appreciated by one of skill in the art, ABPs in the same bin (with the exception of bin 5, which as noted above, is a general catch all bin) likely bind to overlapping sites on the target protein. As such, the above epitopes and relevant residues can generally be extended to all such ABPs in the same bin.

[0597] To further examine the above results in regard to ABP 31H4, position E181R, which, according to the above crystal structure, was predicted to interact with R185 to form part of the surface that interacts with the ABP, was also altered (E181R). The results, while not statistically significant on their own, were, when combined with the crystal structure, demonstrative of 31H4 interacting with E181R (data not shown). Thus, position 181 also appears to form part of the epitope for the 31H4 ABP.

[0598] As noted above, the above binding data and epitope characterization references a PCSK9 sequence (SEQ ID NO: 1) that does not include the first 30 amino acids of PCSK9. Thus, the numbering system of this protein fragment, and the SEQ ID NO:s that refer to this fragment, are shifted by 30 amino acids compared to the data and experiments that used a full length PCSK9 numbering system(such as that used in the crystal study data described above). Thus, to compare these results, an extra 30 amino acids should be added to the positions in each of the above epitope mapping results. For example, position 207 of SEQ ID NO: 1 (or SEQ ID NO: 303), correlates to position 237 of SEQ ID NO: 3 (the full length sequence, and the numbering system used throughout the rest of the specification). Table 39.6 outlines how the above noted positions, which reference SEQ ID NO: 1 (and/or SEQ ID NO: 303) correlate with SEQ ID NO: 3 (which includes the signal sequence).

TABLE 39.6

AMINO ACID POSITION IN SEQ ID NO: 1 (EPITOPE DATA)	AMINO ACID POSITION IN SEQ ID NO: 3 (EPITOPE DATA)
207	237
208	238
185	215
181	211
439	469
513	543
538	568

539	569
132	162
351	381
390	420
413	443
582	612
162	192
164	194
167	197
123	153
129	159
311	341
313	343
337	367
519	549
521	551
554	584

[0599] Thus, those embodiments described herein with reference to SEQ ID NO: 1 can also be described, by their above noted corresponding position with reference to SEQ ID NO: 3.

EXAMPLE 40

PCSK9 Domain Binding Assay

[0600] The present example examined where on PCSK9 the various ABPs bound.

[0601] Clear, 96 well maxisorp plates (Nunc) were coated overnight with 2 ug/ml of various anti-PCSK9 antibodies diluted in PBS. Plates were washed thoroughly with PBS/.05% Tween-20 and then blocked for two hours with 3% BSA/PBS. After washing, plates were incubated for two hours with either full length PCSK9 (aa 31-692 SEQ ID NO: 3, procat PCSK9 (aa 31-449 SEQ ID NO: 3) or v-domain PCSK9 (aa 450-692 of SEQ ID NO: 3) diluted in general assay diluent (Immunochemistry Technologies, LLC). Plates were washed and a rabbit polyclonal biotinylated anti-PCSK9 antibody (D8774), which recognizes the procat and v-domain as well as full-length PCSK9, was added at 1 ug/ml (in 1%BSA/PBS). Bound full-length, procat or v-domain PCSK9 was detected by incubation with neutravidin-HRP (Thermo Scientific) at 200 ng/ml (in 1% BSA/PBS) followed by TMB substrate (KPL) and absorbance measurement at 650 nm. The results, presented in FIGS. 28A and 28B, demonstrate the ability of the various ABS to bind to various parts of PCSK9. As shown in FIG. 28B, ABP 31A4 binds to the V domain of PCSK9.

EXAMPLE 41

Neutralizing, non-competitive antigen binding proteins

[0602] The present example demonstrates how to identify and characterize an antigen binding protein that is non-competitive with LDLR for binding with PCSK9, but is still neutralizing towards PCSK9 activity. In other words, such an antigen binding protein will not block PCSK9 from binding to LDLR, but will prevent or reduce PCSK9 mediated LDLR degradation.

[0603] Clear, 384 well plates (Costar) were coated with 2 ug/ml of goat anti-LDL receptor antibody (R&D Systems) diluted in buffer A (100 mM sodium cacodylate, pH 7.4). Plates were washed thoroughly with buffer A and then blocked for 2 hours with buffer B (1% milk in buffer A). After washing, plates were incubated for 1.5 hours with 0.4 ug/ml of LDL receptor (R&D Systems) diluted in buffer C (buffer B supplemented with 10 mM $CaCl_2$). Concurrent with this incubation, 20 ng/ml of biotinylated D374Y PCSK9 was incubated with 100 ng/ml of antibody diluted in buffer A or buffer A alone (control). The LDL receptor containing plates were washed and the biotinylated D374Y PCSK9/antibody mixture was transferred to them and incubated for 1 hour at room temperature. Binding of the biotinylated D374Y to the LDL receptor was detected by incubation with streptavidin-HRP (Biosource) at 500 ng/ml in buffer C followed by TMB substrate (KPL). The signal was quenched with 1N HCl and the absorbance read at 450 nm. The results are presented in FIG. 28C, which shows that while ABP 31H4 inhibits LDLR binding, ABP 31A4 does not inhibit LDLR binding to PCSK9. In combination with the results from Example 40 and shown in FIGs. 28A and 28B, it is clear that 31A4 ABP binds to the V domain of PCSK9 and does not block the interaction of PCSK9 with LDLR.

[0604] Next, the Ability of ABP 31A4 to serve as a neutralizing ABP was further confirmed via a cell LDL uptake assay (as described in the examples above). The results of this LDL uptake assay are presented in FIG. 28D. As shown in FIG. 28D, ABP 31A4 displays significant PCSK9 neutralizing ability. Thus, in light of Example 40 and the present results, it is clear that ABPs can bind to PCSK9 without blocking the PCSK9 and LDLR binding interaction, while still being useful as neutralizing PCSK9 ABPs.

Incorporation by Reference

[0605] All references cited herein, including patents, patent applications, papers, text books, and the like, and the references cited therein, to the extent that they are not already, are hereby incorporated herein by reference in their entirety. To the extent that any of the definitions or terms provided in the references incorporated by reference differ from the terms and discussion provided herein, the present terms and definitions control.

Equivalents

[0606] The foregoing written specification is considered to be sufficient to enable one skilled in the art to practice the invention. The foregoing description and examples detail certain preferred embodiments of the invention and describe the best mode contemplated by the inventors. It will be appreciated, however, that no matter how detailed the foregoing may appear in text, the invention may be practiced in many ways and the invention should be construed in accordance with the appended claims and any equivalents thereof.

TABLE 35.1

ATOM	1	CB	THR	61	-65.324	19.274	-35.379	1.00	66.96	A	C
ATOM	2	OG1	THR	61	-64.490	20.386	-35.733	1.00	67.86	A	O
ATOM	3	CG2	THR	61	-65.574	19.285	-33.870	1.00	66.57	A	C
ATOM	4	C	THR	61	-63.283	17.835	-35.088	1.00	62.73	A	C
ATOM	5	O	THR	61	-63.080	16.945	-34.257	1.00	63.03	A	O
ATOM	6	N	THR	61	-65.516	16.775	-35.528	1.00	66.08	A	N
ATOM	7	CA	THR	61	-64.635	17.950	-35.808	1.00	65.41	A	C
ATOM	8	N	ALA	62	-62.364	18.740	-35.417	1.00	59.54	A	N
ATOM	9	CA	ALA	62	-61.013	18.712	-34.866	1.00	55.44	A	C
ATOM	10	CB	ALA	62	-60.100	19.581	-35.709	1.00	54.24	A	C
ATOM	11	C	ALA	62	-60.988	19.182	-33.414	1.00	53.41	A	C
ATOM	12	O	ALA	62	-61.570	20.211	-33.075	1.00	53.36	A	O
ATOM	13	N	THR	63	-60.309	18.421	-32.561	1.00	50.60	A	N
ATOM	14	CA	THR	63	-60.219	18.743	-31.141	1.00	48.08	A	C
ATOM	15	CB	THR	63	-60.538	17.503	-30.272	1.00	48.75	A	C
ATOM	16	OG1	THR	63	-59.717	16.402	-30.683	1.00	48.97	A	O
ATOM	17	CG2	THR	63	-61.997	17.104	-30.426	1.00	47.89	A	C
ATOM	18	C	THR	63	-58.831	19.261	-30.766	1.00	46.77	A	C
ATOM	19	O	THR	63	-57.853	19.004	-31.465	1.00	46.12	A	O
ATOM	20	N	PHE	64	-58.754	19.999	-29.662	1.00	45.98	A	N
ATOM	21	CA	PHE	64	-57.476	20.471	-29.136	1.00	44.11	A	C
ATOM	22	CB	PHE	64	-57.537	21.980	-28.894	1.00	42.47	A	C
ATOM	23	CG	PHE	64	-56.352	22.529	-28.150	1.00	41.54	A	C
ATOM	24	CD1	PHE	64	-55.113	22.627	-28.764	1.00	39.91	A	C
ATOM	25	CD2	PHE	64	-56.484	22.964	-26.839	1.00	40.63	A	C
ATOM	26	CE1	PHE	64	-54.024	23.149	-28.085	1.00	39.85	A	C
ATOM	27	CE2	PHE	64	-55.399	23.489	-26.151	1.00	40.22	A	C
ATOM	28	CZ	PHE	64	-54.166	23.582	-26.776	1.00	39.77	A	C
ATOM	29	C	PHE	64	-57.110	19.744	-27.841	1.00	44.16	A	C
ATOM	30	O	PHE	64	-57.966	19.506	-26.982	1.00	43.98	A	O
ATOM	31	N	HIS	65	-55.834	19.388	-27.711	1.00	43.51	A	N
ATOM	32	CA	HIS	65	-55.348	18.640	-26.554	1.00	42.21	A	C
ATOM	33	CB	HIS	65	-55.015	17.204	-26.964	1.00	42.39	A	C
ATOM	34	CG	HIS	65	-56.168	16.477	-27.581	1.00	45.11	A	C
ATOM	35	CD2	HIS	65	-56.648	16.477	-28.848	1.00	46.30	A	C
ATOM	36	ND1	HIS	65	-57.005	15.656	-26.855	1.00	45.17	A	N
ATOM	37	CE1	HIS	65	-57.951	15.183	-27.648	1.00	45.62	A	C
ATOM	38	NE2	HIS	65	-57.757	15.666	-28.863	1.00	45.65	A	N
ATOM	39	C	HIS	65	-54.115	19.297	-25.941	1.00	42.51	A	C
ATOM	40	O	HIS	65	-53.276	19.865	-26.643	1.00	41.98	A	O
ATOM	41	N	ARG	66	-54.013	19.220	-24.622	1.00	42.62	A	N
ATOM	42	CA	ARG	66	-52.863	19.765	-23.916	1.00	43.48	A	C
ATOM	43	CB	ARG	66	-53.152	21.202	-23.471	1.00	45.30	A	C
ATOM	44	CG	ARG	66	-54.358	21.305	-22.561	1.00	51.92	A	C
ATOM	45	CD	ARG	66	-54.333	22.550	-21.702	1.00	57.80	A	C
ATOM	46	NE	ARG	66	-55.193	22.390	-20.530	1.00	63.34	A	N
ATOM	47	CZ	ARG	66	-54.755	22.114	-19.302	1.00	66.07	A	C
ATOM	48	NH1	ARG	66	-55.620	21.983	-18.304	1.00	68.14	A	N
ATOM	49	NH2	ARG	66	-53.457	21.979	-19.063	1.00	66.65	A	N
ATOM	50	C	ARG	66	-52.570	18.890	-22.698	1.00	42.14	A	C
ATOM	51	O	ARG	66	-53.427	18.129	-22.246	1.00	41.73	A	O
ATOM	52	N	CYS	67	-51.358	18.999	-22.172	1.00	40.93	A	N
ATOM	53	CA	CYS	67	-50.965	18.224	-21.004	1.00	41.21	A	C
ATOM	54	CB	CYS	67	-49.500	18.505	-20.678	1.00	41.47	A	C
ATOM	55	SG	CYS	67	-48.844	17.576	-19.295	1.00	40.60	A	S
ATOM	56	C	CYS	67	-51.843	18.605	-19.813	1.00	43.29	A	C
ATOM	57	O	CYS	67	-52.072	19.789	-19.555	1.00	43.45	A	O
ATOM	58	N	ALA	68	-52.331	17.606	-19.088	1.00	43.43	A	N
ATOM	59	CA	ALA	68	-53.144	17.871	-17.907	1.00	45.62	A	C
ATOM	60	CB	ALA	68	-53.809	16.579	-17.416	1.00	43.28	A	C
ATOM	61	C	ALA	68	-52.315	18.501	-16.783	1.00	46.90	A	C
ATOM	62	O	ALA	68	-52.852	19.232	-15.949	1.00	46.15	A	O
ATOM	63	N	LYS	69	-51.010	18.227	-16.767	1.00	48.41	A	N
ATOM	64	CA	LYS	69	-50.132	18.747	-15.715	1.00	50.02	A	C
ATOM	65	CB	LYS	69	-48.974	17.773	-15.454	1.00	52.87	A	C
ATOM	66	CG	LYS	69	-49.388	16.305	-15.385	1.00	58.02	A	C
ATOM	67	CD	LYS	69	-49.184	15.722	-13.990	1.00	61.71	A	C
ATOM	68	CE	LYS	69	-50.035	14.472	-13.783	1.00	63.38	A	C
ATOM	69	NZ	LYS	69	-50.285	14.221	-12.334	1.00	64.13	A	N
ATOM	70	C	LYS	69	-49.575	20.110	-16.119	1.00	48.59	A	C
ATOM	71	O	LYS	69	-48.626	20.200	-16.891	1.00	49.36	A	O
ATOM	72	N	ASP	70	-50.160	21.169	-15.576	1.00	48.35	A	N
ATOM	73	CA	ASP	70	-49.948	22.512	-16.099	1.00	47.47	A	C
ATOM	74	CB	ASP	70	-50.744	23.526	-15.268	1.00	52.53	A	C

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ATOM     75  CG  ASP    70     -51.508  24.519 -16.137  1.00 57.41      A     C
ATOM     76  OD1 ASP    70     -52.644  24.189 -16.562  1.00 58.27      A     O
ATOM     77  OD2 ASP    70     -50.971  25.623 -16.399  1.00 57.80      A     O
ATOM     78  C   ASP    70     -48.488  22.966 -16.200  1.00 44.86      A     C
ATOM     79  O   ASP    70     -48.098  23.599 -17.180  1.00 45.04      A     O
ATOM     80  N   PRO    71     -47.665  22.667 -15.187  1.00 41.90      A     N
ATOM     81  CD  PRO    71     -48.023  22.174 -13.845  1.00 40.54      A     C
ATOM     82  CA  PRO    71     -46.258  23.083 -15.281  1.00 39.08      A     C
ATOM     83  CB  PRO    71     -45.723  22.898 -13.857  1.00 39.03      A     C
ATOM     84  CG  PRO    71     -46.688  21.975 -13.186  1.00 41.03      A     C
ATOM     85  C   PRO    71     -45.402  22.349 -16.324  1.00 37.94      A     C
ATOM     86  O   PRO    71     -44.280  22.757 -16.608  1.00 36.99      A     O
ATOM     87  N   TRP    72     -45.925  21.270 -16.893  1.00 36.09      A     N
ATOM     88  CA  TRP    72     -45.201  20.539 -17.933  1.00 34.40      A     C
ATOM     89  CB  TRP    72     -45.456  19.034 -17.806  1.00 32.15      A     C
ATOM     90  CG  TRP    72     -44.904  18.427 -16.551  1.00 29.66      A     C
ATOM     91  CD2 TRP    72     -45.042  17.066 -16.126  1.00 28.28      A     C
ATOM     92  CE2 TRP    72     -44.381  16.947 -14.884  1.00 29.32      A     C
ATOM     93  CE3 TRP    72     -45.659  15.938 -16.674  1.00 26.21      A     C
ATOM     94  CD1 TRP    72     -44.183  19.061 -15.580  1.00 28.83      A     C
ATOM     95  NE1 TRP    72     -43.866  18.178 -14.574  1.00 27.11      A     N
ATOM     96  CZ2 TRP    72     -44.322  15.742 -14.181  1.00 28.10      A     C
ATOM     97  CZ3 TRP    72     -45.600  14.745 -15.978  1.00 29.75      A     C
ATOM     98  CH2 TRP    72     -44.935  14.655 -14.741  1.00 30.43      A     C
ATOM     99  C   TRP    72     -45.622  21.004 -19.327  1.00 33.51      A     C
ATOM    100  O   TRP    72     -45.074  20.554 -20.330  1.00 34.06      A     O
ATOM    101  N   ARG    73     -46.599  21.903 -19.379  1.00 33.72      A     N
ATOM    102  CA  ARG    73     -47.088  22.437 -20.643  1.00 35.14      A     C
ATOM    103  CB  ARG    73     -48.370  23.237 -20.407  1.00 37.00      A     C
ATOM    104  CG  ARG    73     -49.543  22.389 -19.975  1.00 41.40      A     C
ATOM    105  CD  ARG    73     -50.786  23.229 -19.825  1.00 45.06      A     C
ATOM    106  NE  ARG    73     -50.898  24.206 -20.902  1.00 50.54      A     N
ATOM    107  CZ  ARG    73     -51.976  24.951 -21.127  1.00 54.08      A     C
ATOM    108  NH1 ARG    73     -53.045  24.829 -20.347  1.00 55.58      A     N
ATOM    109  NH2 ARG    73     -51.983  25.826 -22.126  1.00 54.14      A     N
ATOM    110  C   ARG    73     -46.042  23.327 -21.304  1.00 34.68      A     C
ATOM    111  O   ARG    73     -45.294  24.025 -20.619  1.00 35.28      A     O
ATOM    112  N   LEU    74     -45.986  23.294 -22.633  1.00 32.04      A     N
ATOM    113  CA  LEU    74     -45.086  24.166 -23.385  1.00 32.47      A     C
ATOM    114  CB  LEU    74     -43.966  23.341 -24.031  1.00 31.53      A     C
ATOM    115  CG  LEU    74     -42.990  22.623 -23.087  1.00 32.34      A     C
ATOM    116  CD1 LEU    74     -42.183  21.578 -23.863  1.00 27.72      A     C
ATOM    117  CD2 LEU    74     -42.061  23.647 -22.437  1.00 28.10      A     C
ATOM    118  C   LEU    74     -45.846  24.934 -24.468  1.00 33.33      A     C
ATOM    119  O   LEU    74     -45.677  24.677 -25.662  1.00 33.93      A     O
ATOM    120  N   PRO    75     -46.687  25.897 -24.064  1.00 34.33      A     N
ATOM    121  CD  PRO    75     -46.820  26.440 -22.698  1.00 33.65      A     C
ATOM    122  CA  PRO    75     -47.519  26.621 -25.039  1.00 34.35      A     C
ATOM    123  CB  PRO    75     -48.351  27.573 -24.174  1.00 35.25      A     C
ATOM    124  CG  PRO    75     -47.545  27.746 -22.915  1.00 35.46      A     C
ATOM    125  C   PRO    75     -46.688  27.369 -26.083  1.00 33.52      A     C
ATOM    126  O   PRO    75     -45.553  27.768 -25.817  1.00 32.98      A     O
ATOM    127  N   GLY    76     -47.249  27.547 -27.275  1.00 32.91      A     N
ATOM    128  CA  GLY    76     -46.513  28.227 -28.328  1.00 32.08      A     C
ATOM    129  C   GLY    76     -45.937  27.286 -29.371  1.00 31.14      A     C
ATOM    130  O   GLY    76     -45.480  27.726 -30.424  1.00 31.40      A     O
ATOM    131  N   THR    77     -45.947  25.989 -29.080  1.00 30.23      A     N
ATOM    132  CA  THR    77     -45.584  24.986 -30.073  1.00 30.51      A     C
ATOM    133  CB  THR    77     -44.197  24.368 -29.776  1.00 32.27      A     C
ATOM    134  OG1 THR    77     -43.199  25.398 -29.816  1.00 33.45      A     O
ATOM    135  CG2 THR    77     -43.840  23.311 -30.819  1.00 32.84      A     C
ATOM    136  C   THR    77     -46.647  23.894 -30.107  1.00 30.00      A     C
ATOM    137  O   THR    77     -47.129  23.441 -29.064  1.00 30.45      A     O
ATOM    138  N   TYR    78     -47.024  23.492 -31.317  1.00 28.44      A     N
ATOM    139  CA  TYR    78     -48.156  22.597 -31.514  1.00 27.71      A     C
ATOM    140  CB  TYR    78     -49.396  23.395 -31.939  1.00 27.62      A     C
ATOM    141  CG  TYR    78     -49.730  24.496 -30.967  1.00 29.17      A     C
ATOM    142  CD1 TYR    78     -49.199  25.768 -31.128  1.00 29.25      A     C
ATOM    143  CE1 TYR    78     -49.408  26.757 -30.183  1.00 31.96      A     C
ATOM    144  CD2 TYR    78     -50.494  24.241 -29.837  1.00 28.93      A     C
ATOM    145  CE2 TYR    78     -50.709  25.225 -28.880  1.00 32.16      A     C
ATOM    146  CZ  TYR    78     -50.157  26.479 -29.057  1.00 32.47      A     C
ATOM    147  OH  TYR    78     -50.305  27.440 -28.082  1.00 32.98      A     O
ATOM    148  C   TYR    78     -47.840  21.552 -32.570  1.00 27.76      A     C
ATOM    149  O   TYR    78     -47.154  21.834 -33.559  1.00 25.34      A     O
ATOM    150  N   VAL    79     -48.343  20.343 -32.341  1.00 26.43      A     N
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ATOM    151  CA  VAL    79     -48.337  19.311 -33.357  1.00 27.54      A    C
ATOM    152  CB  VAL    79     -48.010  17.921 -32.760  1.00 28.88      A    C
ATOM    153  CG1 VAL    79     -48.012  16.871 -33.868  1.00 27.66      A    C
ATOM    154  CG2 VAL    79     -46.666  17.959 -32.059  1.00 28.19      A    C
ATOM    155  C   VAL    79     -49.726  19.259 -33.961  1.00 28.85      A    C
ATOM    156  O   VAL    79     -50.712  18.983 -33.264  1.00 28.23      A    O
ATOM    157  N   VAL    80     -49.807  19.534 -35.255  1.00 28.01      A    N
ATOM    158  CA  VAL    80     -51.073  19.430 -35.960  1.00 28.18      A    C
ATOM    159  CB  VAL    80     -51.194  20.529 -37.028  1.00 28.78      A    C
ATOM    160  CG1 VAL    80     -52.524  20.404 -37.761  1.00 28.21      A    C
ATOM    161  CG2 VAL    80     -51.061  21.904 -36.362  1.00 26.47      A    C
ATOM    162  C   VAL    80     -51.126  18.063 -36.617  1.00 30.35      A    C
ATOM    163  O   VAL    80     -50.352  17.769 -37.533  1.00 30.14      A    O
ATOM    164  N   VAL    81     -52.024  17.215 -36.128  1.00 30.97      A    N
ATOM    165  CA  VAL    81     -52.139  15.869 -36.657  1.00 32.26      A    C
ATOM    166  CB  VAL    81     -52.423  14.850 -35.534  1.00 33.61      A    C
ATOM    167  CG1 VAL    81     -52.529  13.441 -36.121  1.00 31.68      A    C
ATOM    168  CG2 VAL    81     -51.316  14.915 -34.487  1.00 31.98      A    C
ATOM    169  C   VAL    81     -53.271  15.838 -37.674  1.00 34.32      A    C
ATOM    170  O   VAL    81     -54.400  16.235 -37.373  1.00 33.98      A    O
ATOM    171  N   LEU    82     -52.955  15.387 -38.883  1.00 34.05      A    N
ATOM    172  CA  LEU    82     -53.938  15.329 -39.961  1.00 37.51      A    C
ATOM    173  CB  LEU    82     -53.260  15.638 -41.300  1.00 34.52      A    C
ATOM    174  CG  LEU    82     -52.581  17.011 -41.323  1.00 34.04      A    C
ATOM    175  CD1 LEU    82     -52.087  17.337 -42.720  1.00 33.14      A    C
ATOM    176  CD2 LEU    82     -53.566  18.057 -40.857  1.00 33.19      A    C
ATOM    177  C   LEU    82     -54.595  13.950 -40.009  1.00 39.40      A    C
ATOM    178  O   LEU    82     -54.057  12.980 -39.475  1.00 38.11      A    O
ATOM    179  N   LYS    83     -55.764  13.864 -40.634  1.00 44.40      A    N
ATOM    180  CA  LYS    83     -56.464  12.586 -40.745  1.00 49.45      A    C
ATOM    181  CB  LYS    83     -57.752  12.756 -41.550  1.00 50.92      A    C
ATOM    182  CG  LYS    83     -58.854  13.495 -40.800  1.00 55.63      A    C
ATOM    183  CD  LYS    83     -59.854  14.109 -41.767  1.00 59.44      A    C
ATOM    184  CE  LYS    83     -60.934  14.899 -41.036  1.00 62.03      A    C
ATOM    185  NZ  LYS    83     -61.717  15.751 -41.986  1.00 64.41      A    N
ATOM    186  C   LYS    83     -55.560  11.562 -41.418  1.00 51.74      A    C
ATOM    187  O   LYS    83     -54.770  11.901 -42.301  1.00 50.75      A    O
ATOM    188  N   GLU    84     -55.663  10.309 -40.997  1.00 55.37      A    N
ATOM    189  CA  GLU    84     -54.787   9.289 -41.549  1.00 60.52      A    C
ATOM    190  CB  GLU    84     -54.910   7.985 -40.756  1.00 63.78      A    C
ATOM    191  CG  GLU    84     -56.292   7.371 -40.753  1.00 69.97      A    C
ATOM    192  CD  GLU    84     -56.295   5.986 -40.129  1.00 74.43      A    C
ATOM    193  OE1 GLU    84     -57.294   5.631 -39.462  1.00 75.98      A    O
ATOM    194  OE2 GLU    84     -55.293   5.254 -40.306  1.00 75.33      A    O
ATOM    195  C   GLU    84     -55.110   9.052 -43.022  1.00 61.14      A    C
ATOM    196  O   GLU    84     -56.248   9.246 -43.458  1.00 60.67      A    O
ATOM    197  N   GLU    85     -54.089   8.649 -43.774  1.00 61.46      A    N
ATOM    198  CA  GLU    85     -54.163   8.519 -45.227  1.00 63.36      A    C
ATOM    199  CB  GLU    85     -55.532   7.980 -45.662  1.00 67.22      A    C
ATOM    200  CG  GLU    85     -55.846   6.597 -45.096  1.00 73.81      A    C
ATOM    201  CD  GLU    85     -56.946   5.875 -45.858  1.00 78.53      A    C
ATOM    202  OE1 GLU    85     -57.733   6.545 -46.567  1.00 80.96      A    O
ATOM    203  OE2 GLU    85     -57.022   4.630 -45.745  1.00 80.38      A    O
ATOM    204  C   GLU    85     -53.865   9.835 -45.944  1.00 61.28      A    C
ATOM    205  O   GLU    85     -53.744   9.869 -47.172  1.00 61.77      A    O
ATOM    206  N   THR    86     -53.735  10.917 -45.181  1.00 57.81      A    N
ATOM    207  CA  THR    86     -53.256  12.173 -45.746  1.00 54.38      A    C
ATOM    208  CB  THR    86     -53.297  13.312 -44.701  1.00 52.95      A    C
ATOM    209  OG1 THR    86     -54.654  13.549 -44.307  1.00 50.34      A    O
ATOM    210  CG2 THR    86     -52.720  14.593 -45.281  1.00 50.02      A    C
ATOM    211  C   THR    86     -51.821  11.989 -46.243  1.00 53.59      A    C
ATOM    212  O   THR    86     -50.973  11.435 -45.539  1.00 52.24      A    O
ATOM    213  N   HIS    87     -51.562  12.442 -47.466  1.00 52.07      A    N
ATOM    214  CA  HIS    87     -50.250  12.287 -48.084  1.00 51.71      A    C
ATOM    215  CB  HIS    87     -50.401  12.183 -49.605  1.00 55.85      A    C
ATOM    216  CG  HIS    87     -51.185  10.986 -50.052  1.00 63.40      A    C
ATOM    217  CD2 HIS    87     -52.429  10.880 -50.579  1.00 64.75      A    C
ATOM    218  ND1 HIS    87     -50.690   9.700 -49.975  1.00 65.63      A    N
ATOM    219  CE1 HIS    87     -51.597   8.854 -50.434  1.00 66.35      A    C
ATOM    220  NE2 HIS    87     -52.660   9.544 -50.807  1.00 65.74      A    N
ATOM    221  C   HIS    87     -49.312  13.445 -47.732  1.00 48.81      A    C
ATOM    222  O   HIS    87     -49.760  14.519 -47.319  1.00 47.37      A    O
ATOM    223  N   LEU    88     -48.011  13.213 -47.896  1.00 46.04      A    N
ATOM    224  CA  LEU    88     -46.992  14.193 -47.536  1.00 44.77      A    C
ATOM    225  CB  LEU    88     -45.601  13.697 -47.944  1.00 43.47      A    C
ATOM    226  CG  LEU    88     -44.448  14.702 -47.814  1.00 44.24      A    C
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ATOM    227  CD1 LEU    88     -44.344  15.214 -46.379  1.00 40.89      A    C
ATOM    228  CD2 LEU    88     -43.149  14.037 -48.245  1.00 42.45      A    C
ATOM    229  C   LEU    88     -47.250  15.548 -48.176  1.00 43.96      A    C
ATOM    230  O   LEU    88     -47.167  16.583 -47.508  1.00 42.78      A    O
ATOM    231  N   SER    89     -47.568  15.543 -49.467  1.00 43.13      A    N
ATOM    232  CA  SER    89     -47.769  16.797 -50.187  1.00 43.67      A    C
ATOM    233  CB  SER    89     -47.949  16.537 -51.691  1.00 43.34      A    C
ATOM    234  OG  SER    89     -48.935  15.547 -51.926  1.00 47.73      A    O
ATOM    235  C   SER    89     -48.968  17.560 -49.634  1.00 41.76      A    C
ATOM    236  O   SER    89     -48.992  18.786 -49.663  1.00 43.20      A    O
ATOM    237  N   GLN    90     -49.954  16.836 -49.116  1.00 40.72      A    N
ATOM    238  CA  GLN    90     -51.101  17.471 -48.471  1.00 41.68      A    C
ATOM    239  CB  GLN    90     -52.241  16.452 -48.289  1.00 45.43      A    C
ATOM    240  CG  GLN    90     -52.820  15.904 -49.606  1.00 51.25      A    C
ATOM    241  CD  GLN    90     -53.850  14.789 -49.394  1.00 54.98      A    C
ATOM    242  OE1 GLN    90     -53.500  13.650 -49.059  1.00 54.79      A    O
ATOM    243  NE2 GLN    90     -55.127  15.117 -49.589  1.00 54.36      A    N
ATOM    244  C   GLN    90     -50.737  18.100 -47.114  1.00 39.35      A    C
ATOM    245  O   GLN    90     -51.158  19.219 -46.820  1.00 38.00      A    O
ATOM    246  N   SER    91     -49.960  17.388 -46.297  1.00 36.66      A    N
ATOM    247  CA  SER    91     -49.456  17.947 -45.037  1.00 36.04      A    C
ATOM    248  CB  SER    91     -48.607  16.919 -44.289  1.00 36.68      A    C
ATOM    249  OG  SER    91     -49.340  15.738 -44.034  1.00 45.07      A    O
ATOM    250  C   SER    91     -48.596  19.173 -45.311  1.00 34.52      A    C
ATOM    251  O   SER    91     -48.730  20.197 -44.648  1.00 31.21      A    O
ATOM    252  N   GLU    92     -47.711  19.056 -46.296  1.00 34.78      A    N
ATOM    253  CA  GLU    92     -46.823  20.147 -46.664  1.00 37.08      A    C
ATOM    254  CB  GLU    92     -45.942  19.724 -47.847  1.00 37.84      A    C
ATOM    255  CG  GLU    92     -44.600  20.442 -47.938  1.00 42.08      A    C
ATOM    256  CD  GLU    92     -44.680  21.789 -48.662  1.00 43.83      A    C
ATOM    257  OE1 GLU    92     -43.855  22.689 -48.358  1.00 38.38      A    O
ATOM    258  OE2 GLU    92     -45.566  21.940 -49.539  1.00 45.37      A    O
ATOM    259  C   GLU    92     -47.649  21.386 -47.028  1.00 37.77      A    C
ATOM    260  O   GLU    92     -47.367  22.486 -46.549  1.00 36.08      A    O
ATOM    261  N   ARG    93     -48.680  21.200 -47.855  1.00 37.72      A    N
ATOM    262  CA  ARG    93     -49.527  22.313 -48.300  1.00 37.76      A    C
ATOM    263  CB  ARG    93     -50.435  21.876 -49.457  1.00 39.31      A    C
ATOM    264  CG  ARG    93     -49.726  21.788 -50.808  1.00 46.60      A    C
ATOM    265  CD  ARG    93     -50.717  21.579 -51.963  1.00 52.39      A    C
ATOM    266  NE  ARG    93     -50.750  20.189 -52.419  1.00 56.69      A    N
ATOM    267  CZ  ARG    93     -51.698  19.309 -52.098  1.00 58.62      A    C
ATOM    268  NH1 ARG    93     -51.630  18.066 -52.563  1.00 58.46      A    N
ATOM    269  NH2 ARG    93     -52.715  19.667 -51.319  1.00 59.41      A    N
ATOM    270  C   ARG    93     -50.387  22.891 -47.181  1.00 35.91      A    C
ATOM    271  O   ARG    93     -50.610  24.097 -47.121  1.00 36.85      A    O
ATOM    272  N   THR    94     -50.869  22.034 -46.292  1.00 34.43      A    N
ATOM    273  CA  THR    94     -51.674  22.500 -45.173  1.00 34.17      A    C
ATOM    274  CB  THR    94     -52.275  21.305 -44.401  1.00 35.39      A    C
ATOM    275  OG1 THR    94     -53.069  20.519 -45.297  1.00 35.45      A    O
ATOM    276  CG2 THR    94     -53.159  21.789 -43.246  1.00 33.36      A    C
ATOM    277  C   THR    94     -50.843  23.370 -44.218  1.00 34.67      A    C
ATOM    278  O   THR    94     -51.341  24.355 -43.673  1.00 34.08      A    O
ATOM    279  N   ALA    95     -49.574  23.019 -44.031  1.00 33.89      A    N
ATOM    280  CA  ALA    95     -48.687  23.832 -43.203  1.00 35.56      A    C
ATOM    281  CB  ALA    95     -47.331  23.137 -43.037  1.00 32.25      A    C
ATOM    282  C   ALA    95     -48.496  25.225 -43.816  1.00 36.52      A    C
ATOM    283  O   ALA    95     -48.536  26.234 -43.107  1.00 35.42      A    O
ATOM    284  N   ARG    96     -48.297  25.280 -45.132  1.00 36.12      A    N
ATOM    285  CA  ARG    96     -48.094  26.559 -45.807  1.00 38.95      A    C
ATOM    286  CB  ARG    96     -47.563  26.342 -47.234  1.00 37.87      A    C
ATOM    287  CG  ARG    96     -46.128  25.808 -47.253  1.00 40.62      A    C
ATOM    288  CD  ARG    96     -45.424  26.077 -48.575  1.00 41.07      A    C
ATOM    289  NE  ARG    96     -44.078  25.501 -48.616  1.00 41.43      A    N
ATOM    290  CZ  ARG    96     -42.998  26.079 -48.093  1.00 41.81      A    C
ATOM    291  NH1 ARG    96     -41.814  25.485 -48.180  1.00 41.20      A    N
ATOM    292  NH2 ARG    96     -43.096  27.252 -47.481  1.00 39.73      A    N
ATOM    293  C   ARG    96     -49.383  27.372 -45.841  1.00 39.48      A    C
ATOM    294  O   ARG    96     -49.357  28.604 -45.812  1.00 39.37      A    O
ATOM    295  N   ARG    97     -50.512  26.676 -45.885  1.00 39.22      A    N
ATOM    296  CA  ARG    97     -51.805  27.334 -45.815  1.00 41.01      A    C
ATOM    297  CB  ARG    97     -52.915  26.305 -46.028  1.00 45.31      A    C
ATOM    298  CG  ARG    97     -54.299  26.890 -46.199  1.00 52.12      A    C
ATOM    299  CD  ARG    97     -55.098  26.064 -47.200  1.00 60.48      A    C
ATOM    300  NE  ARG    97     -56.533  26.107 -46.930  1.00 66.20      A    N
ATOM    301  CZ  ARG    97     -57.321  27.138 -47.226  1.00 68.21      A    C
ATOM    302  NH1 ARG    97     -58.617  27.084 -46.940  1.00 68.65      A    N
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ATOM    303  NH2 ARG    97     -56.813  28.223 -47.803  1.00 70.24      A    N
ATOM    304  C   ARG    97     -51.979  28.026 -44.460  1.00 39.37      A    C
ATOM    305  O   ARG    97     -52.377  29.190 -44.393  1.00 38.18      A    O
ATOM    306  N   LEU    98     -51.674  27.311 -43.381  1.00 37.41      A    N
ATOM    307  CA  LEU    98     -51.764  27.897 -42.050  1.00 35.51      A    C
ATOM    308  CB  LEU    98     -51.356  26.884 -40.977  1.00 34.36      A    C
ATOM    309  CG  LEU    98     -51.216  27.460 -39.563  1.00 36.07      A    C
ATOM    310  CD1 LEU    98     -52.558  28.003 -39.099  1.00 35.97      A    C
ATOM    311  CD2 LEU    98     -50.727  26.386 -38.604  1.00 36.03      A    C
ATOM    312  C   LEU    98     -50.862  29.122 -41.961  1.00 35.38      A    C
ATOM    313  O   LEU    98     -51.275  30.158 -41.446  1.00 33.36      A    O
ATOM    314  N   GLN    99     -49.635  29.007 -42.469  1.00 34.49      A    N
ATOM    315  CA  GLN    99     -48.693  30.123 -42.409  1.00 37.42      A    C
ATOM    316  CB  GLN    99     -47.359  29.745 -43.061  1.00 38.96      A    C
ATOM    317  CG  GLN    99     -46.377  29.034 -42.146  1.00 40.19      A    C
ATOM    318  CD  GLN    99     -44.931  29.254 -42.564  1.00 41.88      A    C
ATOM    319  OE1 GLN    99     -44.540  28.924 -43.683  1.00 41.48      A    O
ATOM    320  NE2 GLN    99     -44.129  29.816 -41.661  1.00 40.56      A    N
ATOM    321  C   GLN    99     -49.248  31.371 -43.099  1.00 38.67      A    C
ATOM    322  O   GLN    99     -49.136  32.484 -42.577  1.00 38.83      A    O
ATOM    323  N   ALA   100     -49.844  31.179 -44.273  1.00 39.11      A    N
ATOM    324  CA  ALA   100     -50.344  32.293 -45.074  1.00 40.09      A    C
ATOM    325  CB  ALA   100     -50.704  31.814 -46.483  1.00 38.16      A    C
ATOM    326  C   ALA   100     -51.558  32.935 -44.416  1.00 40.78      A    C
ATOM    327  O   ALA   100     -51.685  34.160 -44.396  1.00 41.97      A    O
ATOM    328  N   GLN   101     -52.447  32.113 -43.870  1.00 39.41      A    N
ATOM    329  CA  GLN   101     -53.600  32.644 -43.160  1.00 39.71      A    C
ATOM    330  CB  GLN   101     -54.533  31.518 -42.724  1.00 38.98      A    C
ATOM    331  CG  GLN   101     -55.204  30.803 -43.877  1.00 41.93      A    C
ATOM    332  CD  GLN   101     -56.129  29.706 -43.405  1.00 44.37      A    C
ATOM    333  OE1 GLN   101     -56.874  29.125 -44.192  1.00 45.91      A    O
ATOM    334  NE2 GLN   101     -56.089  29.417 -42.109  1.00 44.36      A    N
ATOM    335  C   GLN   101     -53.174  33.447 -41.940  1.00 40.25      A    C
ATOM    336  O   GLN   101     -53.731  34.512 -41.671  1.00 42.25      A    O
ATOM    337  N   ALA   102     -52.190  32.942 -41.203  1.00 38.45      A    N
ATOM    338  CA  ALA   102     -51.734  33.620 -39.993  1.00 37.78      A    C
ATOM    339  CB  ALA   102     -50.782  32.710 -39.198  1.00 35.08      A    C
ATOM    340  C   ALA   102     -51.037  34.934 -40.346  1.00 37.94      A    C
ATOM    341  O   ALA   102     -51.148  35.924 -39.615  1.00 37.67      A    O
ATOM    342  N   ALA   103     -50.321  34.940 -41.467  1.00 37.12      A    N
ATOM    343  CA  ALA   103     -49.589  36.127 -41.901  1.00 39.38      A    C
ATOM    344  CB  ALA   103     -48.705  35.787 -43.098  1.00 38.54      A    C
ATOM    345  C   ALA   103     -50.549  37.259 -42.268  1.00 41.97      A    C
ATOM    346  O   ALA   103     -50.268  38.437 -42.012  1.00 41.53      A    O
ATOM    347  N   ARG   104     -51.682  36.897 -42.864  1.00 42.63      A    N
ATOM    348  CA  ARG   104     -52.688  37.879 -43.245  1.00 43.83      A    C
ATOM    349  CB  ARG   104     -53.755  37.233 -44.139  1.00 43.90      A    C
ATOM    350  CG  ARG   104     -53.228  36.835 -45.513  1.00 45.54      A    C
ATOM    351  CD  ARG   104     -54.345  36.651 -46.528  1.00 48.21      A    C
ATOM    352  NE  ARG   104     -55.256  35.566 -46.168  1.00 53.08      A    N
ATOM    353  CZ  ARG   104     -55.105  34.300 -46.558  1.00 54.45      A    C
ATOM    354  NH1 ARG   104     -55.984  33.379 -46.184  1.00 53.80      A    N
ATOM    355  NH2 ARG   104     -54.073  33.952 -47.320  1.00 52.89      A    N
ATOM    356  C   ARG   104     -53.340  38.507 -42.018  1.00 44.46      A    C
ATOM    357  O   ARG   104     -53.924  39.589 -42.105  1.00 46.11      A    O
ATOM    358  N   ARG   105     -53.232  37.834 -40.874  1.00 43.03      A    N
ATOM    359  CA  ARG   105     -53.775  38.365 -39.630  1.00 40.77      A    C
ATOM    360  CB  ARG   105     -54.477  37.259 -38.845  1.00 43.29      A    C
ATOM    361  CG  ARG   105     -55.681  36.688 -39.562  1.00 45.71      A    C
ATOM    362  CD  ARG   105     -56.288  35.538 -38.794  1.00 50.02      A    C
ATOM    363  NE  ARG   105     -57.613  35.199 -39.305  1.00 54.91      A    N
ATOM    364  CZ  ARG   105     -57.854  34.793 -40.549  1.00 59.39      A    C
ATOM    365  NH1 ARG   105     -59.096  34.507 -40.919  1.00 61.37      A    N
ATOM    366  NH2 ARG   105     -56.859  34.672 -41.427  1.00 58.64      A    N
ATOM    367  C   ARG   105     -52.704  39.007 -38.763  1.00 40.45      A    C
ATOM    368  O   ARG   105     -52.958  39.360 -37.610  1.00 41.05      A    O
ATOM    369  N   GLY   106     -51.506  39.156 -39.320  1.00 40.26      A    N
ATOM    370  CA  GLY   106     -50.439  39.843 -38.615  1.00 42.36      A    C
ATOM    371  C   GLY   106     -49.558  38.965 -37.734  1.00 43.39      A    C
ATOM    372  O   GLY   106     -48.806  39.476 -36.896  1.00 41.65      A    O
ATOM    373  N   TYR   107     -49.642  37.648 -37.915  1.00 43.64      A    N
ATOM    374  CA  TYR   107     -48.869  36.719 -37.088  1.00 43.17      A    C
ATOM    375  CB  TYR   107     -49.783  35.631 -36.521  1.00 42.03      A    C
ATOM    376  CG  TYR   107     -50.728  36.113 -35.444  1.00 42.50      A    C
ATOM    377  CD1 TYR   107     -50.404  35.976 -34.097  1.00 41.77      A    C
ATOM    378  CE1 TYR   107     -51.274  36.385 -33.105  1.00 41.27      A    C
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ATOM    379  CD2 TYR   107     -51.955  36.679 -35.770  1.00 41.20      A    C
ATOM    380  CE2 TYR   107     -52.835  37.092 -34.782  1.00 40.76      A    C
ATOM    381  CZ  TYR   107     -52.490  36.941 -33.452  1.00 42.29      A    C
ATOM    382  OH  TYR   107     -53.364  37.337 -32.463  1.00 42.42      A    O
ATOM    383  C   TYR   107     -47.719  36.059 -37.842  1.00 42.45      A    C
ATOM    384  O   TYR   107     -47.907  35.508 -38.926  1.00 42.84      A    O
ATOM    385  N   LEU   108     -46.528  36.115 -37.259  1.00 42.23      A    N
ATOM    386  CA  LEU   108     -45.416  35.300 -37.728  1.00 43.15      A    C
ATOM    387  CB  LEU   108     -44.090  35.880 -37.237  1.00 46.35      A    C
ATOM    388  CG  LEU   108     -42.840  35.075 -37.603  1.00 50.90      A    C
ATOM    389  CD1 LEU   108     -42.631  35.119 -39.111  1.00 51.51      A    C
ATOM    390  CD2 LEU   108     -41.625  35.650 -36.885  1.00 52.89      A    C
ATOM    391  C   LEU   108     -45.581  33.878 -37.189  1.00 41.70      A    C
ATOM    392  O   LEU   108     -45.960  33.690 -36.031  1.00 42.13      A    O
ATOM    393  N   THR   109     -45.314  32.881 -38.030  1.00 37.66      A    N
ATOM    394  CA  THR   109     -45.293  31.495 -37.574  1.00 35.85      A    C
ATOM    395  CB  THR   109     -46.585  30.736 -37.972  1.00 34.84      A    C
ATOM    396  OG1 THR   109     -46.667  30.637 -39.400  1.00 35.33      A    O
ATOM    397  CG2 THR   109     -47.812  31.465 -37.451  1.00 34.18      A    C
ATOM    398  C   THR   109     -44.095  30.767 -38.174  1.00 35.46      A    C
ATOM    399  O   THR   109     -43.532  31.204 -39.178  1.00 34.99      A    O
ATOM    400  N   LYS   110     -43.699  29.662 -37.551  1.00 34.81      A    N
ATOM    401  CA  LYS   110     -42.624  28.837 -38.086  1.00 34.79      A    C
ATOM    402  CB  LYS   110     -41.374  28.961 -37.217  1.00 38.01      A    C
ATOM    403  CG  LYS   110     -40.739  30.336 -37.252  1.00 44.73      A    C
ATOM    404  CD  LYS   110     -39.687  30.494 -36.164  1.00 51.66      A    C
ATOM    405  CE  LYS   110     -39.100  31.906 -36.163  1.00 57.04      A    C
ATOM    406  NZ  LYS   110     -38.261  32.179 -34.953  1.00 60.67      A    N
ATOM    407  C   LYS   110     -43.044  27.379 -38.169  1.00 33.48      A    C
ATOM    408  O   LYS   110     -43.505  26.798 -37.182  1.00 30.94      A    O
ATOM    409  N   ILE   111     -42.891  26.794 -39.355  1.00 31.38      A    N
ATOM    410  CA  ILE   111     -43.033  25.352 -39.502  1.00 29.98      A    C
ATOM    411  CB  ILE   111     -43.366  24.953 -40.965  1.00 30.23      A    C
ATOM    412  CG2 ILE   111     -43.548  23.447 -41.065  1.00 27.09      A    C
ATOM    413  CG1 ILE   111     -44.646  25.652 -41.423  1.00 30.09      A    C
ATOM    414  CD1 ILE   111     -45.821  25.410 -40.511  1.00 30.43      A    C
ATOM    415  C   ILE   111     -41.689  24.745 -39.118  1.00 28.90      A    C
ATOM    416  O   ILE   111     -40.673  25.036 -39.745  1.00 28.53      A    O
ATOM    417  N   LEU   112     -41.680  23.909 -38.087  1.00 28.45      A    N
ATOM    418  CA  LEU   112     -40.429  23.359 -37.587  1.00 27.85      A    C
ATOM    419  CB  LEU   112     -40.487  23.232 -36.061  1.00 28.31      A    C
ATOM    420  CG  LEU   112     -40.736  24.527 -35.266  1.00 29.90      A    C
ATOM    421  CD1 LEU   112     -40.836  24.200 -33.780  1.00 27.40      A    C
ATOM    422  CD2 LEU   112     -39.608  25.527 -35.517  1.00 25.41      A    C
ATOM    423  C   LEU   112     -40.136  22.001 -38.209  1.00 28.75      A    C
ATOM    424  O   LEU   112     -38.976  21.588 -38.297  1.00 28.71      A    O
ATOM    425  N   HIS   113     -41.192  21.314 -38.645  1.00 28.46      A    N
ATOM    426  CA  HIS   113     -41.075  19.943 -39.129  1.00 29.20      A    C
ATOM    427  CB  HIS   113     -40.758  19.009 -37.954  1.00 29.04      A    C
ATOM    428  CG  HIS   113     -40.325  17.638 -38.367  1.00 29.50      A    C
ATOM    429  CD2 HIS   113     -41.039  16.519 -38.639  1.00 30.05      A    C
ATOM    430  ND1 HIS   113     -38.999  17.296 -38.533  1.00 31.19      A    N
ATOM    431  CE1 HIS   113     -38.915  16.026 -38.890  1.00 29.33      A    C
ATOM    432  NE2 HIS   113     -40.139  15.532 -38.962  1.00 30.67      A    N
ATOM    433  C   HIS   113     -42.377  19.500 -39.796  1.00 29.37      A    C
ATOM    434  O   HIS   113     -43.461  19.850 -39.336  1.00 30.57      A    O
ATOM    435  N   VAL   114     -42.277  18.730 -40.874  1.00 28.34      A    N
ATOM    436  CA  VAL   114     -43.460  18.116 -41.461  1.00 28.24      A    C
ATOM    437  CB  VAL   114     -43.648  18.545 -42.950  1.00 29.58      A    C
ATOM    438  CG1 VAL   114     -44.890  17.869 -43.556  1.00 24.77      A    C
ATOM    439  CG2 VAL   114     -43.802  20.055 -43.027  1.00 25.34      A    C
ATOM    440  C   VAL   114     -43.320  16.606 -41.363  1.00 30.01      A    C
ATOM    441  O   VAL   114     -42.368  16.031 -41.883  1.00 30.39      A    O
ATOM    442  N   PHE   115     -44.267  15.971 -40.679  1.00 31.76      A    N
ATOM    443  CA  PHE   115     -44.191  14.543 -40.424  1.00 35.74      A    C
ATOM    444  CB  PHE   115     -45.024  14.170 -39.198  1.00 33.99      A    C
ATOM    445  CG  PHE   115     -44.490  14.724 -37.909  1.00 34.95      A    C
ATOM    446  CD1 PHE   115     -44.984  15.915 -37.391  1.00 33.81      A    C
ATOM    447  CD2 PHE   115     -43.491  14.054 -37.212  1.00 33.75      A    C
ATOM    448  CE1 PHE   115     -44.490  16.432 -36.195  1.00 33.67      A    C
ATOM    449  CE2 PHE   115     -42.992  14.562 -36.019  1.00 32.89      A    C
ATOM    450  CZ  PHE   115     -43.454  15.757 -35.509  1.00 33.21      A    C
ATOM    451  C   PHE   115     -44.679  13.738 -41.615  1.00 40.69      A    C
ATOM    452  O   PHE   115     -45.672  14.089 -42.257  1.00 42.29      A    O
ATOM    453  N   HIS   116     -43.967  12.656 -41.902  1.00 45.48      A    N
ATOM    454  CA  HIS   116     -44.434  11.637 -42.830  1.00 51.72      A    C
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ATOM    455  CB  HIS   116     -44.084  12.017 -44.279  1.00 55.93      A    C
ATOM    456  CG  HIS   116     -42.638  12.353 -44.495  1.00 62.52      A    C
ATOM    457  CD2 HIS   116     -41.911  13.443 -44.143  1.00 65.77      A    C
ATOM    458  ND1 HIS   116     -41.775  11.528 -45.187  1.00 65.95      A    N
ATOM    459  CE1 HIS   116     -40.582  12.096 -45.255  1.00 67.64      A    C
ATOM    460  NE2 HIS   116     -40.638  13.260 -44.630  1.00 66.85      A    N
ATOM    461  C   HIS   116     -43.776  10.314 -42.461  1.00 53.18      A    C
ATOM    462  O   HIS   116     -42.587  10.270 -42.142  1.00 53.78      A    O
ATOM    463  N   GLY   117     -44.552   9.237 -42.497  1.00 54.01      A    N
ATOM    464  CA  GLY   117     -43.996   7.932 -42.198  1.00 55.08      A    C
ATOM    465  C   GLY   117     -44.538   7.307 -40.927  1.00 55.76      A    C
ATOM    466  O   GLY   117     -44.749   6.093 -40.868  1.00 58.44      A    O
ATOM    467  N   LEU   118     -44.763   8.122 -39.903  1.00 54.93      A    N
ATOM    468  CA  LEU   118     -45.369   7.626 -38.676  1.00 54.61      A    C
ATOM    469  CB  LEU   118     -44.501   7.993 -37.470  1.00 54.38      A    C
ATOM    470  CG  LEU   118     -44.413   6.966 -36.338  1.00 53.70      A    C
ATOM    471  CD1 LEU   118     -43.981   5.612 -36.888  1.00 53.81      A    C
ATOM    472  CD2 LEU   118     -43.423   7.449 -35.300  1.00 54.71      A    C
ATOM    473  C   LEU   118     -46.755   8.238 -38.526  1.00 54.27      A    C
ATOM    474  O   LEU   118     -47.759   7.530 -38.530  1.00 57.04      A    O
ATOM    475  N   LEU   119     -46.802   9.559 -38.397  1.00 52.23      A    N
ATOM    476  CA  LEU   119     -48.061  10.289 -38.399  1.00 49.64      A    C
ATOM    477  CB  LEU   119     -48.289  10.982 -37.050  1.00 52.24      A    C
ATOM    478  CG  LEU   119     -48.274  10.081 -35.808  1.00 57.18      A    C
ATOM    479  CD1 LEU   119     -48.778  10.861 -34.599  1.00 55.90      A    C
ATOM    480  CD2 LEU   119     -49.146   8.844 -36.045  1.00 57.99      A    C
ATOM    481  C   LEU   119     -47.994  11.336 -39.501  1.00 46.53      A    C
ATOM    482  O   LEU   119     -46.925  11.861 -39.808  1.00 46.48      A    O
ATOM    483  N   PRO   120     -49.134  11.634 -40.127  1.00 42.44      A    N
ATOM    484  CD  PRO   120     -50.381  10.850 -40.113  1.00 43.27      A    C
ATOM    485  CA  PRO   120     -49.213  12.766 -41.047  1.00 40.39      A    C
ATOM    486  CB  PRO   120     -50.352  12.380 -41.986  1.00 41.28      A    C
ATOM    487  CG  PRO   120     -51.269  11.576 -41.117  1.00 42.77      A    C
ATOM    488  C   PRO   120     -49.510  14.053 -40.281  1.00 36.94      A    C
ATOM    489  O   PRO   120     -50.454  14.115 -39.494  1.00 35.42      A    O
ATOM    490  N   GLY   121     -48.709  15.080 -40.524  1.00 34.63      A    N
ATOM    491  CA  GLY   121     -48.946  16.355 -39.877  1.00 33.37      A    C
ATOM    492  C   GLY   121     -47.703  17.217 -39.859  1.00 32.35      A    C
ATOM    493  O   GLY   121     -46.770  17.017 -40.649  1.00 31.71      A    O
ATOM    494  N   PHE   122     -47.678  18.189 -38.960  1.00 29.96      A    N
ATOM    495  CA  PHE   122     -46.524  19.062 -38.876  1.00 29.31      A    C
ATOM    496  CB  PHE   122     -46.594  20.142 -39.967  1.00 26.41      A    C
ATOM    497  CG  PHE   122     -47.862  20.952 -39.947  1.00 27.75      A    C
ATOM    498  CD1 PHE   122     -47.950  22.110 -39.188  1.00 26.81      A    C
ATOM    499  CD2 PHE   122     -48.951  20.582 -40.726  1.00 29.77      A    C
ATOM    500  CE1 PHE   122     -49.094  22.893 -39.204  1.00 28.13      A    C
ATOM    501  CE2 PHE   122     -50.104  21.358 -40.750  1.00 29.99      A    C
ATOM    502  CZ  PHE   122     -50.171  22.519 -39.984  1.00 31.24      A    C
ATOM    503  C   PHE   122     -46.397  19.697 -37.506  1.00 29.39      A    C
ATOM    504  O   PHE   122     -47.327  19.652 -36.694  1.00 29.97      A    O
ATOM    505  N   LEU   123     -45.224  20.273 -37.260  1.00 28.83      A    N
ATOM    506  CA  LEU   123     -44.905  20.916 -35.996  1.00 28.28      A    C
ATOM    507  CB  LEU   123     -43.564  20.388 -35.475  1.00 27.66      A    C
ATOM    508  CG  LEU   123     -43.059  20.877 -34.115  1.00 29.62      A    C
ATOM    509  CD1 LEU   123     -44.026  20.443 -33.014  1.00 28.28      A    C
ATOM    510  CD2 LEU   123     -41.672  20.302 -33.859  1.00 27.46      A    C
ATOM    511  C   LEU   123     -44.803  22.405 -36.288  1.00 29.10      A    C
ATOM    512  O   LEU   123     -44.065  22.816 -37.189  1.00 29.03      A    O
ATOM    513  N   VAL   124     -45.550  23.213 -35.542  1.00 27.38      A    N
ATOM    514  CA  VAL   124     -45.576  24.643 -35.802  1.00 26.87      A    C
ATOM    515  CB  VAL   124     -46.916  25.073 -36.456  1.00 26.05      A    C
ATOM    516  CG1 VAL   124     -48.076  24.763 -35.536  1.00 24.54      A    C
ATOM    517  CG2 VAL   124     -46.889  26.561 -36.776  1.00 28.03      A    C
ATOM    518  C   VAL   124     -45.363  25.447 -34.526  1.00 29.30      A    C
ATOM    519  O   VAL   124     -45.985  25.179 -33.486  1.00 28.28      A    O
ATOM    520  N   LYS   125     -44.469  26.425 -34.606  1.00 29.09      A    N
ATOM    521  CA  LYS   125     -44.318  27.401 -33.538  1.00 32.58      A    C
ATOM    522  CB  LYS   125     -42.848  27.803 -33.411  1.00 35.01      A    C
ATOM    523  CG  LYS   125     -42.592  28.896 -32.398  1.00 39.45      A    C
ATOM    524  CD  LYS   125     -41.413  28.552 -31.512  1.00 47.60      A    C
ATOM    525  CE  LYS   125     -40.270  29.542 -31.691  1.00 51.01      A    C
ATOM    526  NZ  LYS   125     -40.658  30.922 -31.270  1.00 53.91      A    N
ATOM    527  C   LYS   125     -45.177  28.624 -33.872  1.00 33.31      A    C
ATOM    528  O   LYS   125     -44.953  29.288 -34.884  1.00 32.62      A    O
ATOM    529  N   MET   126     -46.168  28.908 -33.034  1.00 32.61      A    N
ATOM    530  CA  MET   126     -47.086  30.010 -33.300  1.00 34.07      A    C
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ATOM    531  CB  MET   126      -48.114  29.606 -34.350  1.00 33.99      A    C
ATOM    532  CG  MET   126      -49.105  28.574 -33.839  1.00 34.58      A    C
ATOM    533  SD  MET   126      -50.324  28.127 -35.077  1.00 40.88      A    S
ATOM    534  CE  MET   126      -51.558  27.301 -34.063  1.00 35.19      A    C
ATOM    535  C   MET   126      -47.818  30.398 -32.031  1.00 35.02      A    C
ATOM    536  O   MET   126      -47.805  29.660 -31.050  1.00 34.82      A    O
ATOM    537  N   SER   127      -48.468  31.558 -32.065  1.00 36.79      A    N
ATOM    538  CA  SER   127      -49.278  32.027 -30.950  1.00 37.25      A    C
ATOM    539  CB  SER   127      -49.715  33.476 -31.191  1.00 38.68      A    C
ATOM    540  OG  SER   127      -50.780  33.843 -30.324  1.00 38.32      A    O
ATOM    541  C   SER   127      -50.513  31.154 -30.760  1.00 38.35      A    C
ATOM    542  O   SER   127      -51.135  30.722 -31.735  1.00 37.21      A    O
ATOM    543  N   GLY   128      -50.868  30.911 -29.499  1.00 37.77      A    N
ATOM    544  CA  GLY   128      -52.105  30.216 -29.194  1.00 38.41      A    C
ATOM    545  C   GLY   128      -53.353  30.935 -29.684  1.00 39.05      A    C
ATOM    546  O   GLY   128      -54.423  30.331 -29.770  1.00 39.27      A    O
ATOM    547  N   ASP   129      -53.228  32.218 -30.013  1.00 40.07      A    N
ATOM    548  CA  ASP   129      -54.350  32.965 -30.590  1.00 42.01      A    C
ATOM    549  CB  ASP   129      -53.927  34.389 -30.966  1.00 42.77      A    C
ATOM    550  CG  ASP   129      -53.629  35.254 -29.754  1.00 46.29      A    C
ATOM    551  OD1 ASP   129      -54.080  34.900 -28.640  1.00 44.66      A    O
ATOM    552  OD2 ASP   129      -52.943  36.292 -29.921  1.00 48.24      A    O
ATOM    553  C   ASP   129      -54.878  32.275 -31.842  1.00 42.68      A    C
ATOM    554  O   ASP   129      -56.064  32.371 -32.158  1.00 43.03      A    O
ATOM    555  N   LEU   130      -53.988  31.581 -32.548  1.00 40.92      A    N
ATOM    556  CA  LEU   130      -54.286  31.050 -33.871  1.00 39.89      A    C
ATOM    557  CB  LEU   130      -53.007  31.009 -34.712  1.00 38.83      A    C
ATOM    558  CG  LEU   130      -52.325  32.351 -34.993  1.00 39.26      A    C
ATOM    559  CD1 LEU   130      -50.980  32.102 -35.649  1.00 37.90      A    C
ATOM    560  CD2 LEU   130      -53.211  33.209 -35.892  1.00 38.49      A    C
ATOM    561  C   LEU   130      -54.916  29.658 -33.840  1.00 40.44      A    C
ATOM    562  O   LEU   130      -55.200  29.082 -34.890  1.00 40.55      A    O
ATOM    563  N   LEU   131      -55.134  29.116 -32.646  1.00 41.71      A    N
ATOM    564  CA  LEU   131      -55.621  27.744 -32.522  1.00 43.42      A    C
ATOM    565  CB  LEU   131      -55.691  27.336 -31.048  1.00 44.46      A    C
ATOM    566  CG  LEU   131      -54.345  26.961 -30.421  1.00 47.94      A    C
ATOM    567  CD1 LEU   131      -54.504  26.760 -28.916  1.00 47.71      A    C
ATOM    568  CD2 LEU   131      -53.809  25.692 -31.088  1.00 46.48      A    C
ATOM    569  C   LEU   131      -56.979  27.524 -33.179  1.00 44.30      A    C
ATOM    570  O   LEU   131      -57.199  26.501 -33.827  1.00 43.27      A    O
ATOM    571  N   GLU   132      -57.890  28.479 -33.010  1.00 46.35      A    N
ATOM    572  CA  GLU   132      -59.217  28.363 -33.610  1.00 48.86      A    C
ATOM    573  CB  GLU   132      -60.113  29.525 -33.171  1.00 54.02      A    C
ATOM    574  CG  GLU   132      -60.487  29.509 -31.691  1.00 62.96      A    C
ATOM    575  CD  GLU   132      -61.250  28.252 -31.282  1.00 68.59      A    C
ATOM    576  OE1 GLU   132      -61.985  27.693 -32.128  1.00 71.67      A    O
ATOM    577  OE2 GLU   132      -61.115  27.822 -30.113  1.00 71.20      A    O
ATOM    578  C   GLU   132      -59.084  28.360 -35.126  1.00 46.75      A    C
ATOM    579  O   GLU   132      -59.755  27.596 -35.818  1.00 46.81      A    O
ATOM    580  N   LEU   133      -58.203  29.214 -35.632  1.00 44.75      A    N
ATOM    581  CA  LEU   133      -57.902  29.257 -37.056  1.00 45.11      A    C
ATOM    582  CB  LEU   133      -56.868  30.351 -37.336  1.00 45.98      A    C
ATOM    583  CG  LEU   133      -56.392  30.501 -38.783  1.00 49.58      A    C
ATOM    584  CD1 LEU   133      -57.518  31.052 -39.652  1.00 51.14      A    C
ATOM    585  CD2 LEU   133      -55.197  31.432 -38.826  1.00 49.33      A    C
ATOM    586  C   LEU   133      -57.364  27.910 -37.532  1.00 44.38      A    C
ATOM    587  O   LEU   133      -57.798  27.386 -38.556  1.00 45.21      A    O
ATOM    588  N   ALA   134      -56.424  27.346 -36.779  1.00 42.85      A    N
ATOM    589  CA  ALA   134      -55.745  26.128 -37.203  1.00 41.92      A    C
ATOM    590  CB  ALA   134      -54.524  25.871 -36.316  1.00 39.84      A    C
ATOM    591  C   ALA   134      -56.692  24.937 -37.160  1.00 41.73      A    C
ATOM    592  O   ALA   134      -56.595  24.027 -37.986  1.00 41.34      A    O
ATOM    593  N   LEU   135      -57.611  24.952 -36.198  1.00 42.08      A    N
ATOM    594  CA  LEU   135      -58.586  23.880 -36.049  1.00 43.75      A    C
ATOM    595  CB  LEU   135      -59.368  24.059 -34.746  1.00 41.32      A    C
ATOM    596  CG  LEU   135      -58.641  23.644 -33.463  1.00 40.82      A    C
ATOM    597  CD1 LEU   135      -59.491  23.981 -32.244  1.00 38.47      A    C
ATOM    598  CD2 LEU   135      -58.354  22.152 -33.506  1.00 37.33      A    C
ATOM    599  C   LEU   135      -59.559  23.796 -37.226  1.00 45.90      A    C
ATOM    600  O   LEU   135      -60.250  22.793 -37.394  1.00 46.62      A    O
ATOM    601  N   LYS   136      -59.608  24.844 -38.043  1.00 48.08      A    N
ATOM    602  CA  LYS   136      -60.506  24.866 -39.194  1.00 49.87      A    C
ATOM    603  CB  LYS   136      -61.132  26.257 -39.356  1.00 52.29      A    C
ATOM    604  CG  LYS   136      -62.148  26.597 -38.274  1.00 56.29      A    C
ATOM    605  CD  LYS   136      -62.611  28.041 -38.367  1.00 60.74      A    C
ATOM    606  CE  LYS   136      -63.461  28.418 -37.155  1.00 63.43      A    C
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ATOM    607  NZ  LYS   136     -63.810  29.871 -37.140  1.00 65.11      A    N
ATOM    608  C   LYS   136     -59.831  24.457 -40.500  1.00 49.01      A    C
ATOM    609  O   LYS   136     -60.486  24.373 -41.534  1.00 48.28      A    O
ATOM    610  N   LEU   137     -58.528  24.203 -40.457  1.00 48.46      A    N
ATOM    611  CA  LEU   137     -57.811  23.779 -41.654  1.00 48.15      A    C
ATOM    612  CB  LEU   137     -56.310  23.668 -41.373  1.00 45.68      A    C
ATOM    613  CG  LEU   137     -55.542  24.954 -41.071  1.00 45.92      A    C
ATOM    614  CD1 LEU   137     -54.210  24.602 -40.435  1.00 45.13      A    C
ATOM    615  CD2 LEU   137     -55.333  25.751 -42.347  1.00 45.54      A    C
ATOM    616  C   LEU   137     -58.331  22.434 -42.157  1.00 50.34      A    C
ATOM    617  O   LEU   137     -58.786  21.593 -41.381  1.00 50.05      A    O
ATOM    618  N   PRO   138     -58.259  22.216 -43.475  1.00 51.81      A    N
ATOM    619  CD  PRO   138     -57.640  23.117 -44.464  1.00 52.57      A    C
ATOM    620  CA  PRO   138     -58.681  20.948 -44.072  1.00 51.58      A    C
ATOM    621  CB  PRO   138     -58.532  21.194 -45.570  1.00 53.25      A    C
ATOM    622  CG  PRO   138     -57.444  22.226 -45.664  1.00 54.45      A    C
ATOM    623  C   PRO   138     -57.781  19.819 -43.595  1.00 51.03      A    C
ATOM    624  O   PRO   138     -56.592  20.030 -43.365  1.00 51.14      A    O
ATOM    625  N   HIS   139     -58.357  18.630 -43.445  1.00 49.72      A    N
ATOM    626  CA  HIS   139     -57.612  17.420 -43.104  1.00 49.11      A    C
ATOM    627  CB  HIS   139     -56.319  17.331 -43.922  1.00 53.64      A    C
ATOM    628  CG  HIS   139     -56.525  17.442 -45.400  1.00 58.94      A    C
ATOM    629  CD2 HIS   139     -55.808  18.085 -46.354  1.00 60.61      A    C
ATOM    630  ND1 HIS   139     -57.578  16.838 -46.055  1.00 61.11      A    N
ATOM    631  CE1 HIS   139     -57.500  17.102 -47.347  1.00 61.63      A    C
ATOM    632  NE2 HIS   139     -56.435  17.857 -47.555  1.00 62.34      A    N
ATOM    633  C   HIS   139     -57.263  17.285 -41.622  1.00 45.66      A    C
ATOM    634  O   HIS   139     -56.773  16.242 -41.200  1.00 45.43      A    O
ATOM    635  N   VAL   140     -57.501  18.326 -40.830  1.00 41.49      A    N
ATOM    636  CA  VAL   140     -57.052  18.302 -39.446  1.00 39.22      A    C
ATOM    637  CB  VAL   140     -57.126  19.687 -38.790  1.00 38.25      A    C
ATOM    638  CG1 VAL   140     -56.864  19.562 -37.301  1.00 36.67      A    C
ATOM    639  CG2 VAL   140     -56.103  20.613 -39.421  1.00 36.79      A    C
ATOM    640  C   VAL   140     -57.867  17.343 -38.606  1.00 40.24      A    C
ATOM    641  O   VAL   140     -59.085  17.463 -38.518  1.00 40.95      A    O
ATOM    642  N   ASP   141     -57.180  16.387 -37.990  1.00 40.17      A    N
ATOM    643  CA  ASP   141     -57.803  15.464 -37.048  1.00 39.16      A    C
ATOM    644  CB  ASP   141     -57.006  14.154 -37.017  1.00 40.87      A    C
ATOM    645  CG  ASP   141     -57.716  13.050 -36.253  1.00 42.53      A    C
ATOM    646  OD1 ASP   141     -58.728  13.338 -35.574  1.00 46.58      A    O
ATOM    647  OD2 ASP   141     -57.257  11.890 -36.333  1.00 40.88      A    O
ATOM    648  C   ASP   141     -57.826  16.110 -35.658  1.00 38.98      A    C
ATOM    649  O   ASP   141     -58.887  16.284 -35.058  1.00 39.39      A    O
ATOM    650  N   TYR   142     -56.653  16.476 -35.151  1.00 37.04      A    N
ATOM    651  CA  TYR   142     -56.576  17.204 -33.888  1.00 34.27      A    C
ATOM    652  CB  TYR   142     -56.771  16.246 -32.709  1.00 34.16      A    C
ATOM    653  CG  TYR   142     -55.712  15.171 -32.610  1.00 33.65      A    C
ATOM    654  CD1 TYR   142     -54.583  15.355 -31.824  1.00 33.96      A    C
ATOM    655  CE1 TYR   142     -53.614  14.369 -31.716  1.00 35.51      A    C
ATOM    656  CD2 TYR   142     -55.845  13.968 -33.294  1.00 34.96      A    C
ATOM    657  CE2 TYR   142     -54.879  12.974 -33.194  1.00 35.75      A    C
ATOM    658  CZ  TYR   142     -53.767  13.183 -32.400  1.00 36.08      A    C
ATOM    659  OH  TYR   142     -52.808  12.205 -32.281  1.00 36.47      A    O
ATOM    660  C   TYR   142     -55.245  17.928 -33.753  1.00 32.82      A    C
ATOM    661  O   TYR   142     -54.307  17.675 -34.513  1.00 33.32      A    O
ATOM    662  N   ILE   143     -55.175  18.836 -32.787  1.00 31.85      A    N
ATOM    663  CA  ILE   143     -53.972  19.615 -32.529  1.00 31.41      A    C
ATOM    664  CB  ILE   143     -54.234  21.113 -32.796  1.00 30.29      A    C
ATOM    665  CG2 ILE   143     -53.001  21.943 -32.452  1.00 28.35      A    C
ATOM    666  CG1 ILE   143     -54.622  21.306 -34.262  1.00 30.00      A    C
ATOM    667  CD1 ILE   143     -54.835  22.751 -34.658  1.00 26.92      A    C
ATOM    668  C   ILE   143     -53.538  19.429 -31.074  1.00 32.89      A    C
ATOM    669  O   ILE   143     -54.354  19.544 -30.152  1.00 33.57      A    O
ATOM    670  N   GLU   144     -52.258  19.141 -30.860  1.00 31.53      A    N
ATOM    671  CA  GLU   144     -51.760  18.993 -29.501  1.00 32.32      A    C
ATOM    672  CB  GLU   144     -51.252  17.567 -29.262  1.00 34.26      A    C
ATOM    673  CG  GLU   144     -50.743  17.356 -27.841  1.00 39.57      A    C
ATOM    674  CD  GLU   144     -50.533  15.893 -27.496  1.00 43.13      A    C
ATOM    675  OE1 GLU   144     -51.317  15.052 -27.991  1.00 45.28      A    O
ATOM    676  OE2 GLU   144     -49.584  15.588 -26.731  1.00 41.06      A    O
ATOM    677  C   GLU   144     -50.662  19.990 -29.147  1.00 30.86      A    C
ATOM    678  O   GLU   144     -49.686  20.164 -29.882  1.00 31.43      A    O
ATOM    679  N   GLU   145     -50.831  20.643 -28.005  1.00 30.15      A    N
ATOM    680  CA  GLU   145     -49.824  21.553 -27.476  1.00 29.60      A    C
ATOM    681  CB  GLU   145     -50.415  22.337 -26.310  1.00 29.75      A    C
ATOM    682  CG  GLU   145     -49.471  23.329 -25.667  1.00 33.69      A    C
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ATOM    683  CD  GLU   145     -50.070  23.931 -24.404  1.00 36.75      A    C
ATOM    684  OE1 GLU   145     -49.915  23.325 -23.319  1.00 34.36      A    O
ATOM    685  OE2 GLU   145     -50.705  25.004 -24.499  1.00 39.41      A    O
ATOM    686  C   GLU   145     -48.618  20.749 -26.997  1.00 28.98      A    C
ATOM    687  O   GLU   145     -48.777  19.735 -26.312  1.00 25.84      A    O
ATOM    688  N   ASP   146     -47.417  21.197 -27.350  1.00 27.03      A    N
ATOM    689  CA  ASP   146     -46.210  20.501 -26.925  1.00 28.33      A    C
ATOM    690  CB  ASP   146     -44.974  21.179 -27.513  1.00 30.15      A    C
ATOM    691  CG  ASP   146     -43.820  20.205 -27.738  1.00 34.26      A    C
ATOM    692  OD1 ASP   146     -43.952  19.010 -27.376  1.00 33.09      A    O
ATOM    693  OD2 ASP   146     -42.781  20.640 -28.285  1.00 34.49      A    O
ATOM    694  C   ASP   146     -46.119  20.489 -25.395  1.00 28.56      A    C
ATOM    695  O   ASP   146     -46.792  21.263 -24.712  1.00 27.12      A    O
ATOM    696  N   SER   147     -45.298  19.596 -24.858  1.00 28.76      A    N
ATOM    697  CA  SER   147     -45.097  19.524 -23.415  1.00 29.70      A    C
ATOM    698  CB  SER   147     -46.315  18.887 -22.732  1.00 31.44      A    C
ATOM    699  OG  SER   147     -46.524  17.558 -23.186  1.00 37.75      A    O
ATOM    700  C   SER   147     -43.843  18.713 -23.115  1.00 28.55      A    C
ATOM    701  O   SER   147     -43.271  18.091 -24.015  1.00 27.48      A    O
ATOM    702  N   SER   148     -43.421  18.727 -21.854  1.00 25.24      A    N
ATOM    703  CA  SER   148     -42.114  18.204 -21.478  1.00 26.40      A    C
ATOM    704  CB  SER   148     -41.591  18.950 -20.244  1.00 27.71      A    C
ATOM    705  OG  SER   148     -41.445  20.339 -20.503  1.00 28.90      A    O
ATOM    706  C   SER   148     -42.137  16.710 -21.178  1.00 27.07      A    C
ATOM    707  O   SER   148     -43.147  16.173 -20.707  1.00 27.21      A    O
ATOM    708  N   VAL   149     -41.016  16.046 -21.441  1.00 25.66      A    N
ATOM    709  CA  VAL   149     -40.784  14.704 -20.915  1.00 24.89      A    C
ATOM    710  CB  VAL   149     -40.688  13.659 -22.044  1.00 25.33      A    C
ATOM    711  CG1 VAL   149     -41.989  13.632 -22.833  1.00 24.08      A    C
ATOM    712  CG2 VAL   149     -39.513  13.983 -22.962  1.00 21.20      A    C
ATOM    713  C   VAL   149     -39.485  14.704 -20.111  1.00 26.06      A    C
ATOM    714  O   VAL   149     -38.609  15.546 -20.335  1.00 25.28      A    O
ATOM    715  N   PHE   150     -39.370  13.768 -19.172  1.00 24.42      A    N
ATOM    716  CA  PHE   150     -38.287  13.797 -18.188  1.00 25.00      A    C
ATOM    717  CB  PHE   150     -38.824  14.250 -16.820  1.00 20.88      A    C
ATOM    718  CG  PHE   150     -39.485  15.601 -16.838  1.00 24.00      A    C
ATOM    719  CD1 PHE   150     -40.842  15.721 -17.094  1.00 23.42      A    C
ATOM    720  CD2 PHE   150     -38.752  16.752 -16.574  1.00 22.91      A    C
ATOM    721  CE1 PHE   150     -41.457  16.958 -17.086  1.00 22.83      A    C
ATOM    722  CE2 PHE   150     -39.360  17.998 -16.565  1.00 21.63      A    C
ATOM    723  CZ  PHE   150     -40.712  18.103 -16.820  1.00 23.76      A    C
ATOM    724  C   PHE   150     -37.642  12.421 -18.033  1.00 23.77      A    C
ATOM    725  O   PHE   150     -38.326  11.399 -18.040  1.00 23.53      A    O
ATOM    726  N   ALA   151     -36.326  12.404 -17.874  1.00 24.56      A    N
ATOM    727  CA  ALA   151     -35.626  11.185 -17.508  1.00 25.41      A    C
ATOM    728  CB  ALA   151     -34.193  11.513 -17.136  1.00 24.13      A    C
ATOM    729  C   ALA   151     -36.332  10.537 -16.324  1.00 28.65      A    C
ATOM    730  O   ALA   151     -36.760  11.228 -15.395  1.00 28.24      A    O
ATOM    731  N   GLN   152     -36.467   9.213 -16.349  1.00 30.75      A    N
ATOM    732  CA  GLN   152     -36.936   8.504 -15.160  1.00 32.33      A    C
ATOM    733  CB  GLN   152     -38.119   7.599 -15.515  1.00 30.09      A    C
ATOM    734  CG  GLN   152     -39.322   8.338 -16.062  1.00 26.52      A    C
ATOM    735  CD  GLN   152     -39.871   9.357 -15.078  1.00 29.34      A    C
ATOM    736  OE1 GLN   152     -40.420   8.999 -14.037  1.00 26.44      A    O
ATOM    737  NE2 GLN   152     -39.722  10.637 -15.405  1.00 27.86      A    N
ATOM    738  C   GLN   152     -35.802   7.678 -14.544  1.00 34.54      A    C
ATOM    739  O   GLN   152     -36.084   6.635 -13.913  1.00 35.69      A    O
ATOM    740  OXT GLN   152     -34.632   8.101 -14.686  1.00 36.82      A    O
TER     741      GLN   152                                              A
ATOM    742  CB  SER   153     -18.830 -12.304  -7.860  1.00 80.02      B    C
ATOM    743  OG  SER   153     -19.427 -13.535  -8.246  1.00 82.63      B    O
ATOM    744  C   SER   153     -20.846 -11.007  -8.585  1.00 76.11      B    C
ATOM    745  O   SER   153     -20.475 -10.397  -9.589  1.00 76.49      B    O
ATOM    746  N   SER   153     -20.624 -11.755  -6.227  1.00 78.23      B    N
ATOM    747  CA  SER   153     -19.883 -11.272  -7.430  1.00 78.01      B    C
ATOM    748  N   ILE   154     -22.081 -11.479  -8.439  1.00 72.80      B    N
ATOM    749  CA  ILE   154     -23.127 -11.189  -9.412  1.00 68.74      B    C
ATOM    750  CB  ILE   154     -23.892 -12.470  -9.810  1.00 69.24      B    C
ATOM    751  CG2 ILE   154     -25.019 -12.132 -10.773  1.00 67.60      B    C
ATOM    752  CG1 ILE   154     -22.925 -13.469 -10.450  1.00 70.75      B    C
ATOM    753  CD1 ILE   154     -22.160 -12.910 -11.639  1.00 70.73      B    C
ATOM    754  C   ILE   154     -24.115 -10.187  -8.825  1.00 65.36      B    C
ATOM    755  O   ILE   154     -24.664 -10.406  -7.742  1.00 65.44      B    O
ATOM    756  N   PRO   155     -24.353  -9.072  -9.536  1.00 61.02      B    N
ATOM    757  CD  PRO   155     -23.763  -8.705 -10.836  1.00 60.32      B    C
ATOM    758  CA  PRO   155     -25.287  -8.050  -9.051  1.00 56.72      B    C
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ATOM    759  CB  PRO   155      -25.337  -7.035 -10.194  1.00 57.80      B    C
ATOM    760  CG  PRO   155      -24.044  -7.232 -10.926  1.00 58.94      B    C
ATOM    761  C   PRO   155      -26.648  -8.670  -8.768  1.00 53.19      B    C
ATOM    762  O   PRO   155      -27.121  -9.515  -9.529  1.00 52.31      B    O
ATOM    763  N   TRP   156      -27.273  -8.252  -7.671  1.00 49.27      B    N
ATOM    764  CA  TRP   156      -28.513  -8.872  -7.221  1.00 47.58      B    C
ATOM    765  CB  TRP   156      -29.045  -8.152  -5.978  1.00 45.42      B    C
ATOM    766  CG  TRP   156      -29.708  -6.840  -6.286  1.00 46.00      B    C
ATOM    767  CD2 TRP   156      -31.083  -6.637  -6.635  1.00 44.51      B    C
ATOM    768  CE2 TRP   156      -31.263  -5.253  -6.836  1.00 44.08      B    C
ATOM    769  CE3 TRP   156      -32.178  -7.492  -6.798  1.00 44.17      B    C
ATOM    770  CD1 TRP   156      -29.125  -5.603  -6.290  1.00 45.31      B    C
ATOM    771  NE1 TRP   156      -30.054  -4.645  -6.620  1.00 45.73      B    N
ATOM    772  CZ2 TRP   156      -32.494  -4.703  -7.189  1.00 44.63      B    C
ATOM    773  CZ3 TRP   156      -33.402  -6.945  -7.150  1.00 46.04      B    C
ATOM    774  CH2 TRP   156      -33.550  -5.562  -7.342  1.00 44.87      B    C
ATOM    775  C   TRP   156      -29.572  -8.841  -8.319  1.00 46.81      B    C
ATOM    776  O   TRP   156      -30.349  -9.784  -8.470  1.00 46.89      B    O
ATOM    777  N   ASN   157      -29.592  -7.752  -9.084  1.00 45.77      B    N
ATOM    778  CA  ASN   157      -30.608  -7.547 -10.110  1.00 44.93      B    C
ATOM    779  CB  ASN   157      -30.586  -6.094 -10.592  1.00 43.13      B    C
ATOM    780  CG  ASN   157      -29.204  -5.642 -10.993  1.00 42.32      B    C
ATOM    781  OD1 ASN   157      -28.302  -5.561 -10.159  1.00 43.42      B    O
ATOM    782  ND2 ASN   157      -29.024  -5.346 -12.276  1.00 38.97      B    N
ATOM    783  C   ASN   157      -30.433  -8.478 -11.302  1.00 44.94      B    C
ATOM    784  O   ASN   157      -31.416  -8.900 -11.907  1.00 43.18      B    O
ATOM    785  N   LEU   158      -29.187  -8.793 -11.646  1.00 47.58      B    N
ATOM    786  CA  LEU   158      -28.925  -9.724 -12.742  1.00 50.92      B    C
ATOM    787  CB  LEU   158      -27.458  -9.672 -13.166  1.00 49.39      B    C
ATOM    788  CG  LEU   158      -27.030  -8.392 -13.884  1.00 50.63      B    C
ATOM    789  CD1 LEU   158      -25.669  -8.602 -14.531  1.00 48.36      B    C
ATOM    790  CD2 LEU   158      -28.074  -8.020 -14.933  1.00 48.22      B    C
ATOM    791  C   LEU   158      -29.282 -11.147 -12.338  1.00 52.96      B    C
ATOM    792  O   LEU   158      -29.812 -11.914 -13.139  1.00 54.48      B    O
ATOM    793  N   GLU   159      -28.989 -11.493 -11.091  1.00 55.23      B    N
ATOM    794  CA  GLU   159      -29.383 -12.783 -10.541  1.00 58.07      B    C
ATOM    795  CB  GLU   159      -28.799 -12.949  -9.132  1.00 61.02      B    C
ATOM    796  CG  GLU   159      -29.709 -13.689  -8.161  1.00 66.59      B    C
ATOM    797  CD  GLU   159      -29.956 -12.905  -6.876  1.00 71.01      B    C
ATOM    798  OE1 GLU   159      -31.037 -12.282  -6.747  1.00 71.63      B    O
ATOM    799  OE2 GLU   159      -29.068 -12.914  -5.992  1.00 72.55      B    O
ATOM    800  C   GLU   159      -30.906 -12.907 -10.490  1.00 58.29      B    C
ATOM    801  O   GLU   159      -31.453 -13.990 -10.695  1.00 56.29      B    O
ATOM    802  N   ARG   160      -31.583 -11.790 -10.230  1.00 59.46      B    N
ATOM    803  CA  ARG   160      -33.016 -11.803  -9.944  1.00 60.58      B    C
ATOM    804  CB  ARG   160      -33.447 -10.460  -9.347  1.00 59.26      B    C
ATOM    805  CG  ARG   160      -34.890 -10.429  -8.869  1.00 59.38      B    C
ATOM    806  CD  ARG   160      -35.116 -11.435  -7.746  1.00 60.25      B    C
ATOM    807  NE  ARG   160      -34.131 -11.276  -6.678  1.00 60.39      B    N
ATOM    808  CZ  ARG   160      -34.313 -10.518  -5.601  1.00 61.06      B    C
ATOM    809  NH1 ARG   160      -33.360 -10.429  -4.681  1.00 59.91      B    N
ATOM    810  NH2 ARG   160      -35.450  -9.849  -5.442  1.00 61.11      B    N
ATOM    811  C   ARG   160      -33.874 -12.114 -11.172  1.00 61.99      B    C
ATOM    812  O   ARG   160      -34.907 -12.780 -11.064  1.00 61.34      B    O
ATOM    813  N   ILE   161      -33.449 -11.629 -12.335  1.00 63.71      B    N
ATOM    814  CA  ILE   161      -34.165 -11.912 -13.575  1.00 66.31      B    C
ATOM    815  CB  ILE   161      -33.882 -10.837 -14.652  1.00 64.21      B    C
ATOM    816  CG2 ILE   161      -34.367  -9.476 -14.172  1.00 63.31      B    C
ATOM    817  CG1 ILE   161      -32.387 -10.803 -14.970  1.00 63.10      B    C
ATOM    818  CD1 ILE   161      -32.035  -9.948 -16.159  1.00 62.54      B    C
ATOM    819  C   ILE   161      -33.786 -13.282 -14.144  1.00 68.85      B    C
ATOM    820  O   ILE   161      -34.429 -13.780 -15.068  1.00 68.03      B    O
ATOM    821  N   THR   162      -32.738 -13.885 -13.590  1.00 72.56      B    N
ATOM    822  CA  THR   162      -32.312 -15.215 -14.016  1.00 77.56      B    C
ATOM    823  CB  THR   162      -30.803 -15.420 -13.772  1.00 77.41      B    C
ATOM    824  OG1 THR   162      -30.059 -14.501 -14.582  1.00 76.98      B    O
ATOM    825  CG2 THR   162      -30.395 -16.843 -14.120  1.00 76.95      B    C
ATOM    826  C   THR   162      -33.082 -16.307 -13.277  1.00 81.06      B    C
ATOM    827  O   THR   162      -33.004 -16.420 -12.054  1.00 80.79      B    O
ATOM    828  N   PRO   163      -33.840 -17.125 -14.024  1.00 85.12      B    N
ATOM    829  CD  PRO   163      -33.917 -17.037 -15.493  1.00 86.11      B    C
ATOM    830  CA  PRO   163      -34.684 -18.206 -13.499  1.00 88.61      B    C
ATOM    831  CB  PRO   163      -35.566 -18.574 -14.689  1.00 87.63      B    C
ATOM    832  CG  PRO   163      -34.720 -18.256 -15.875  1.00 86.84      B    C
ATOM    833  C   PRO   163      -33.869 -19.403 -12.999  1.00 92.41      B    C
ATOM    834  O   PRO   163      -32.664 -19.493 -13.242  1.00 91.73      B    O
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ATOM    835  N   PRO   164     -34.527 -20.342 -12.296  1.00 96.24      B    N
ATOM    836  CD  PRO   164     -35.931 -20.261 -11.855  1.00 97.02      B    C
ATOM    837  CA  PRO   164     -33.868 -21.552 -11.788  1.00 99.15      B    C
ATOM    838  CB  PRO   164     -35.004 -22.323 -11.117  1.00 98.26      B    C
ATOM    839  CG  PRO   164     -35.994 -21.271 -10.743  1.00 97.35      B    C
ATOM    840  C   PRO   164     -33.181 -22.377 -12.878  1.00102.09      B    C
ATOM    841  O   PRO   164     -31.965 -22.576 -12.843  1.00101.97      B    O
ATOM    842  N   ARG   165     -33.962 -22.851 -13.844  1.00105.51      B    N
ATOM    843  CA  ARG   165     -33.429 -23.677 -14.924  1.00109.14      B    C
ATOM    844  CB  ARG   165     -34.487 -24.687 -15.379  1.00111.03      B    C
ATOM    845  CG  ARG   165     -33.981 -26.117 -15.510  1.00114.19      B    C
ATOM    846  CD  ARG   165     -32.793 -26.214 -16.458  1.00116.65      B    C
ATOM    847  NE  ARG   165     -32.370 -27.598 -16.661  1.00118.62      B    N
ATOM    848  CZ  ARG   165     -32.623 -28.306 -17.759  1.00119.70      B    C
ATOM    849  NH1 ARG   165     -32.201 -29.560 -17.854  1.00120.20      B    N
ATOM    850  NH2 ARG   165     -33.293 -27.758 -18.764  1.00119.97      B    N
ATOM    851  C   ARG   165     -33.005 -22.809 -16.108  1.00110.22      B    C
ATOM    852  O   ARG   165     -33.766 -22.624 -17.056  1.00110.60      B    O
ATOM    853  N   TYR   166     -31.787 -22.282 -16.052  1.00111.28      B    N
ATOM    854  CA  TYR   166     -31.320 -21.344 -17.066  1.00112.25      B    C
ATOM    855  CB  TYR   166     -30.758 -20.088 -16.391  1.00113.37      B    C
ATOM    856  CG  TYR   166     -30.241 -19.042 -17.354  1.00114.53      B    C
ATOM    857  CD1 TYR   166     -28.954 -18.532 -17.228  1.00114.68      B    C
ATOM    858  CE1 TYR   166     -28.471 -17.583 -18.110  1.00115.01      B    C
ATOM    859  CD2 TYR   166     -31.035 -18.570 -18.393  1.00114.92      B    C
ATOM    860  CE2 TYR   166     -30.561 -17.619 -19.281  1.00114.93      B    C
ATOM    861  CZ  TYR   166     -29.278 -17.130 -19.135  1.00115.16      B    C
ATOM    862  OH  TYR   166     -28.797 -16.189 -20.017  1.00115.03      B    O
ATOM    863  C   TYR   166     -30.265 -21.965 -17.981  1.00112.12      B    C
ATOM    864  O   TYR   166     -29.207 -22.397 -17.525  1.00111.99      B    O
ATOM    865  N   TYR   171     -28.363 -19.940 -25.299  1.00 96.76      B    N
ATOM    866  CA  TYR   171     -29.633 -19.258 -25.518  1.00 96.87      B    C
ATOM    867  CB  TYR   171     -29.623 -17.883 -24.836  1.00 96.75      B    C
ATOM    868  CG  TYR   171     -30.934 -17.536 -24.160  1.00 96.85      B    C
ATOM    869  CD1 TYR   171     -31.135 -17.811 -22.812  1.00 96.51      B    C
ATOM    870  CE1 TYR   171     -32.345 -17.539 -22.198  1.00 96.16      B    C
ATOM    871  CD2 TYR   171     -31.984 -16.972 -24.877  1.00 96.54      B    C
ATOM    872  CE2 TYR   171     -33.199 -16.697 -24.270  1.00 95.77      B    C
ATOM    873  CZ  TYR   171     -33.373 -16.984 -22.932  1.00 96.10      B    C
ATOM    874  OH  TYR   171     -34.584 -16.727 -22.327  1.00 97.20      B    O
ATOM    875  C   TYR   171     -29.890 -19.090 -27.013  1.00 97.20      B    C
ATOM    876  O   TYR   171     -28.992 -19.292 -27.833  1.00 97.67      B    O
ATOM    877  N   LEU   179     -27.947  -9.679 -34.479  1.00 67.11      B    N
ATOM    878  CA  LEU   179     -29.202  -9.880 -35.196  1.00 67.55      B    C
ATOM    879  CB  LEU   179     -29.749 -11.274 -34.885  1.00 68.43      B    C
ATOM    880  CG  LEU   179     -30.345 -12.050 -36.062  1.00 70.66      B    C
ATOM    881  CD1 LEU   179     -30.862 -13.395 -35.557  1.00 70.04      B    C
ATOM    882  CD2 LEU   179     -31.457 -11.237 -36.722  1.00 68.78      B    C
ATOM    883  C   LEU   179     -30.251  -8.816 -34.831  1.00 66.57      B    C
ATOM    884  O   LEU   179     -30.917  -8.255 -35.704  1.00 67.25      B    O
ATOM    885  N   VAL   180     -30.392  -8.542 -33.537  1.00 63.99      B    N
ATOM    886  CA  VAL   180     -31.393  -7.595 -33.052  1.00 61.13      B    C
ATOM    887  CB  VAL   180     -32.163  -8.180 -31.836  1.00 61.02      B    C
ATOM    888  CG1 VAL   180     -31.183  -8.638 -30.773  1.00 60.46      B    C
ATOM    889  CG2 VAL   180     -33.110  -7.133 -31.260  1.00 60.55      B    C
ATOM    890  C   VAL   180     -30.765  -6.260 -32.651  1.00 58.49      B    C
ATOM    891  O   VAL   180     -29.693  -6.223 -32.049  1.00 58.27      B    O
ATOM    892  N   GLU   181     -31.434  -5.162 -32.988  1.00 56.10      B    N
ATOM    893  CA  GLU   181     -30.940  -3.838 -32.618  1.00 54.53      B    C
ATOM    894  CB  GLU   181     -30.896  -2.931 -33.852  1.00 56.53      B    C
ATOM    895  CG  GLU   181     -29.749  -1.928 -33.833  1.00 62.79      B    C
ATOM    896  CD  GLU   181     -28.759  -2.146 -34.968  1.00 66.51      B    C
ATOM    897  OE1 GLU   181     -27.537  -2.078 -34.714  1.00 69.34      B    O
ATOM    898  OE2 GLU   181     -29.201  -2.383 -36.116  1.00 68.31      B    O
ATOM    899  C   GLU   181     -31.810  -3.196 -31.532  1.00 51.03      B    C
ATOM    900  O   GLU   181     -33.041  -3.231 -31.609  1.00 50.12      B    O
ATOM    901  N   VAL   182     -31.166  -2.615 -30.522  1.00 46.36      B    N
ATOM    902  CA  VAL   182     -31.879  -1.871 -29.485  1.00 44.68      B    C
ATOM    903  CB  VAL   182     -31.417  -2.288 -28.073  1.00 44.84      B    C
ATOM    904  CG1 VAL   182     -32.258  -1.584 -27.023  1.00 43.44      B    C
ATOM    905  CG2 VAL   182     -31.521  -3.796 -27.911  1.00 47.01      B    C
ATOM    906  C   VAL   182     -31.643  -0.365 -29.633  1.00 43.25      B    C
ATOM    907  O   VAL   182     -30.504   0.099 -29.566  1.00 42.77      B    O
ATOM    908  N   TYR   183     -32.715   0.397 -29.837  1.00 39.38      B    N
ATOM    909  CA  TYR   183     -32.602   1.851 -29.872  1.00 38.75      B    C
ATOM    910  CB  TYR   183     -33.594   2.448 -30.872  1.00 39.87      B    C
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ATOM    911  CG  TYR   183     -33.217   2.225 -32.319  1.00 42.94      B    C
ATOM    912  CD1 TYR   183     -33.512   1.026 -32.959  1.00 43.91      B    C
ATOM    913  CE1 TYR   183     -33.177   0.824 -34.290  1.00 46.07      B    C
ATOM    914  CD2 TYR   183     -32.575   3.217 -33.049  1.00 43.64      B    C
ATOM    915  CE2 TYR   183     -32.235   3.025 -34.379  1.00 44.65      B    C
ATOM    916  CZ  TYR   183     -32.539   1.828 -34.994  1.00 45.86      B    C
ATOM    917  OH  TYR   183     -32.209   1.635 -36.319  1.00 48.85      B    O
ATOM    918  C   TYR   183     -32.859   2.442 -28.492  1.00 37.29      B    C
ATOM    919  O   TYR   183     -33.803   2.052 -27.804  1.00 34.89      B    O
ATOM    920  N   LEU   184     -32.005   3.380 -28.097  1.00 35.24      B    N
ATOM    921  CA  LEU   184     -32.155   4.093 -26.835  1.00 34.10      B    C
ATOM    922  CB  LEU   184     -30.872   3.962 -26.008  1.00 32.18      B    C
ATOM    923  CG  LEU   184     -30.740   4.832 -24.750  1.00 35.23      B    C
ATOM    924  CD1 LEU   184     -31.760   4.406 -23.708  1.00 32.47      B    C
ATOM    925  CD2 LEU   184     -29.326   4.703 -24.190  1.00 32.96      B    C
ATOM    926  C   LEU   184     -32.438   5.567 -27.122  1.00 33.43      B    C
ATOM    927  O   LEU   184     -31.631   6.245 -27.755  1.00 32.77      B    O
ATOM    928  N   LEU   185     -33.587   6.057 -26.669  1.00 33.29      B    N
ATOM    929  CA  LEU   185     -33.857   7.491 -26.690  1.00 35.12      B    C
ATOM    930  CB  LEU   185     -35.280   7.770 -27.183  1.00 34.68      B    C
ATOM    931  CG  LEU   185     -35.549   7.510 -28.664  1.00 37.37      B    C
ATOM    932  CD1 LEU   185     -35.598   6.010 -28.923  1.00 38.05      B    C
ATOM    933  CD2 LEU   185     -36.866   8.155 -29.057  1.00 39.00      B    C
ATOM    934  C   LEU   185     -33.685   8.070 -25.290  1.00 35.69      B    C
ATOM    935  O   LEU   185     -34.515   7.837 -24.413  1.00 36.10      B    O
ATOM    936  N   ASP   186     -32.610   8.824 -25.086  1.00 35.47      B    N
ATOM    937  CA  ASP   186     -32.280   9.325 -23.759  1.00 38.43      B    C
ATOM    938  CB  ASP   186     -31.663   8.204 -22.920  1.00 44.90      B    C
ATOM    939  CG  ASP   186     -31.865   8.412 -21.424  1.00 53.04      B    C
ATOM    940  OD1 ASP   186     -32.984   8.134 -20.929  1.00 56.81      B    O
ATOM    941  OD2 ASP   186     -30.909   8.853 -20.743  1.00 55.06      B    O
ATOM    942  C   ASP   186     -31.307  10.500 -23.842  1.00 37.51      B    C
ATOM    943  O   ASP   186     -31.315  11.259 -24.816  1.00 36.47      B    O
ATOM    944  N   THR   187     -30.474  10.655 -22.818  1.00 34.82      B    N
ATOM    945  CA  THR   187     -29.470  11.707 -22.830  1.00 35.00      B    C
ATOM    946  CB  THR   187     -28.870  11.957 -21.426  1.00 33.57      B    C
ATOM    947  OG1 THR   187     -28.137  10.800 -21.004  1.00 33.38      B    O
ATOM    948  CG2 THR   187     -29.968  12.267 -20.416  1.00 30.31      B    C
ATOM    949  C   THR   187     -28.341  11.270 -23.756  1.00 36.71      B    C
ATOM    950  O   THR   187     -28.362  10.162 -24.304  1.00 36.59      B    O
ATOM    951  N   SER   188     -27.360  12.144 -23.937  1.00 36.36      B    N
ATOM    952  CA  SER   188     -26.153  11.757 -24.641  1.00 39.03      B    C
ATOM    953  CB  SER   188     -25.196  12.947 -24.728  1.00 39.14      B    C
ATOM    954  OG  SER   188     -24.937  13.475 -23.443  1.00 42.99      B    O
ATOM    955  C   SER   188     -25.525  10.610 -23.851  1.00 39.61      B    C
ATOM    956  O   SER   188     -25.828  10.426 -22.666  1.00 38.53      B    O
ATOM    957  N   ILE   189     -24.680   9.822 -24.509  1.00 39.46      B    N
ATOM    958  CA  ILE   189     -24.001   8.725 -23.833  1.00 40.86      B    C
ATOM    959  CB  ILE   189     -24.496   7.342 -24.326  1.00 41.34      B    C
ATOM    960  CG2 ILE   189     -26.000   7.220 -24.131  1.00 38.20      B    C
ATOM    961  CG1 ILE   189     -24.132   7.148 -25.797  1.00 42.75      B    C
ATOM    962  CD1 ILE   189     -24.517   5.784 -26.342  1.00 41.61      B    C
ATOM    963  C   ILE   189     -22.494   8.796 -24.041  1.00 41.60      B    C
ATOM    964  O   ILE   189     -22.009   9.471 -24.946  1.00 40.48      B    O
ATOM    965  N   GLN   190     -21.763   8.102 -23.177  1.00 43.69      B    N
ATOM    966  CA  GLN   190     -20.313   8.010 -23.273  1.00 44.38      B    C
ATOM    967  CB  GLN   190     -19.717   8.024 -21.861  1.00 46.59      B    C
ATOM    968  CG  GLN   190     -18.210   7.870 -21.793  1.00 52.20      B    C
ATOM    969  CD  GLN   190     -17.488   8.863 -22.678  1.00 57.06      B    C
ATOM    970  OE1 GLN   190     -17.364  10.046 -22.337  1.00 59.79      B    O
ATOM    971  NE2 GLN   190     -17.008   8.391 -23.828  1.00 56.64      B    N
ATOM    972  C   GLN   190     -19.971   6.704 -23.996  1.00 44.38      B    C
ATOM    973  O   GLN   190     -19.828   5.657 -23.367  1.00 43.59      B    O
ATOM    974  N   SER   191     -19.854   6.768 -25.318  1.00 44.25      B    N
ATOM    975  CA  SER   191     -19.731   5.559 -26.131  1.00 46.81      B    C
ATOM    976  CB  SER   191     -20.052   5.872 -27.597  1.00 45.03      B    C
ATOM    977  OG  SER   191     -19.186   6.872 -28.106  1.00 45.93      B    O
ATOM    978  C   SER   191     -18.351   4.902 -26.035  1.00 47.69      B    C
ATOM    979  O   SER   191     -18.156   3.788 -26.520  1.00 48.01      B    O
ATOM    980  N   ASP   192     -17.404   5.595 -25.410  1.00 49.21      B    N
ATOM    981  CA  ASP   192     -16.056   5.073 -25.198  1.00 52.01      B    C
ATOM    982  CB  ASP   192     -15.052   6.223 -25.056  1.00 54.81      B    C
ATOM    983  CG  ASP   192     -14.726   6.885 -26.379  1.00 60.16      B    C
ATOM    984  OD1 ASP   192     -15.012   6.277 -27.436  1.00 62.13      B    O
ATOM    985  OD2 ASP   192     -14.181   8.014 -26.361  1.00 61.90      B    O
ATOM    986  C   ASP   192     -15.944   4.185 -23.959  1.00 51.65      B    C
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ATOM    987  O   ASP   192     -14.901   3.577 -23.721  1.00 52.13      B    O
ATOM    988  N   HIS   193     -17.001   4.124 -23.159  1.00 50.05      B    N
ATOM    989  CA  HIS   193     -16.932   3.376 -21.914  1.00 48.15      B    C
ATOM    990  CB  HIS   193     -18.204   3.569 -21.091  1.00 44.37      B    C
ATOM    991  CG  HIS   193     -18.091   3.048 -19.693  1.00 43.27      B    C
ATOM    992  CD2 HIS   193     -17.873   3.686 -18.518  1.00 40.34      B    C
ATOM    993  ND1 HIS   193     -18.178   1.705 -19.389  1.00 42.52      B    N
ATOM    994  CE1 HIS   193     -18.020   1.538 -18.088  1.00 40.12      B    C
ATOM    995  NE2 HIS   193     -17.833   2.725 -17.536  1.00 40.42      B    N
ATOM    996  C   HIS   193     -16.725   1.891 -22.188  1.00 48.80      B    C
ATOM    997  O   HIS   193     -17.291   1.333 -23.131  1.00 48.40      B    O
ATOM    998  N   ARG   194     -15.918   1.256 -21.347  1.00 49.72      B    N
ATOM    999  CA  ARG   194     -15.475  -0.106 -21.594  1.00 51.21      B    C
ATOM   1000  CB  ARG   194     -14.469  -0.527 -20.520  1.00 55.14      B    C
ATOM   1001  CG  ARG   194     -13.596  -1.708 -20.912  1.00 62.40      B    C
ATOM   1002  CD  ARG   194     -14.042  -2.993 -20.227  1.00 68.22      B    C
ATOM   1003  NE  ARG   194     -13.251  -4.143 -20.660  1.00 73.86      B    N
ATOM   1004  CZ  ARG   194     -13.497  -5.402 -20.306  1.00 76.07      B    C
ATOM   1005  NH1 ARG   194     -12.721  -6.383 -20.754  1.00 77.25      B    N
ATOM   1006  NH2 ARG   194     -14.516  -5.685 -19.504  1.00 76.69      B    N
ATOM   1007  C   ARG   194     -16.650  -1.077 -21.620  1.00 49.97      B    C
ATOM   1008  O   ARG   194     -16.568  -2.141 -22.227  1.00 49.91      B    O
ATOM   1009  N   GLU   195     -17.748  -0.710 -20.969  1.00 48.05      B    N
ATOM   1010  CA  GLU   195     -18.907  -1.591 -20.911  1.00 46.66      B    C
ATOM   1011  CB  GLU   195     -19.884  -1.116 -19.833  1.00 47.09      B    C
ATOM   1012  CG  GLU   195     -19.582  -1.665 -18.442  1.00 48.87      B    C
ATOM   1013  CD  GLU   195     -19.912  -3.146 -18.320  1.00 51.11      B    C
ATOM   1014  OE1 GLU   195     -18.981  -3.979 -18.447  1.00 52.26      B    O
ATOM   1015  OE2 GLU   195     -21.100  -3.478 -18.101  1.00 48.64      B    O
ATOM   1016  C   GLU   195     -19.634  -1.698 -22.247  1.00 46.38      B    C
ATOM   1017  O   GLU   195     -20.254  -2.718 -22.542  1.00 44.77      B    O
ATOM   1018  N   ILE   196     -19.557  -0.648 -23.057  1.00 46.54      B    N
ATOM   1019  CA  ILE   196     -20.347  -0.599 -24.280  1.00 48.16      B    C
ATOM   1020  CB  ILE   196     -21.486   0.446 -24.164  1.00 46.92      B    C
ATOM   1021  CG2 ILE   196     -22.476   0.015 -23.102  1.00 45.09      B    C
ATOM   1022  CG1 ILE   196     -20.904   1.822 -23.830  1.00 47.02      B    C
ATOM   1023  CD1 ILE   196     -21.951   2.902 -23.616  1.00 47.07      B    C
ATOM   1024  C   ILE   196     -19.533  -0.296 -25.537  1.00 50.05      B    C
ATOM   1025  O   ILE   196     -20.061  -0.348 -26.647  1.00 50.50      B    O
ATOM   1026  N   GLU   197     -18.253   0.015 -25.371  1.00 52.60      B    N
ATOM   1027  CA  GLU   197     -17.453   0.482 -26.497  1.00 55.84      B    C
ATOM   1028  CB  GLU   197     -16.007   0.709 -26.068  1.00 59.17      B    C
ATOM   1029  CG  GLU   197     -15.164   1.378 -27.140  1.00 66.13      B    C
ATOM   1030  CD  GLU   197     -13.691   1.374 -26.800  1.00 71.16      B    C
ATOM   1031  OE1 GLU   197     -13.222   0.370 -26.214  1.00 74.15      B    O
ATOM   1032  OE2 GLU   197     -13.003   2.371 -27.116  1.00 72.99      B    O
ATOM   1033  C   GLU   197     -17.478  -0.479 -27.685  1.00 55.61      B    C
ATOM   1034  O   GLU   197     -17.271  -1.684 -27.536  1.00 55.13      B    O
ATOM   1035  N   GLY   198     -17.740   0.071 -28.866  1.00 56.15      B    N
ATOM   1036  CA  GLY   198     -17.715  -0.727 -30.077  1.00 56.83      B    C
ATOM   1037  C   GLY   198     -18.987  -1.514 -30.321  1.00 57.44      B    C
ATOM   1038  O   GLY   198     -19.150  -2.122 -31.377  1.00 58.60      B    O
ATOM   1039  N   ARG   199     -19.892  -1.513 -29.349  1.00 57.74      B    N
ATOM   1040  CA  ARG   199     -21.160  -2.213 -29.500  1.00 57.82      B    C
ATOM   1041  CB  ARG   199     -21.349  -3.211 -28.355  1.00 58.86      B    C
ATOM   1042  CG  ARG   199     -20.312  -4.333 -28.336  1.00 63.05      B    C
ATOM   1043  CD  ARG   199     -20.287  -5.097 -29.659  1.00 67.78      B    C
ATOM   1044  NE  ARG   199     -21.503  -5.885 -29.868  1.00 71.51      B    N
ATOM   1045  CZ  ARG   199     -21.995  -6.214 -31.060  1.00 72.46      B    C
ATOM   1046  NH1 ARG   199     -23.109  -6.933 -31.145  1.00 72.69      B    N
ATOM   1047  NH2 ARG   199     -21.376  -5.821 -32.168  1.00 73.16      B    N
ATOM   1048  C   ARG   199     -22.353  -1.256 -29.568  1.00 57.64      B    C
ATOM   1049  O   ARG   199     -23.429  -1.633 -30.030  1.00 58.42      B    O
ATOM   1050  N   VAL   200     -22.169  -0.023 -29.105  1.00 56.67      B    N
ATOM   1051  CA  VAL   200     -23.198   1.001 -29.266  1.00 56.34      B    C
ATOM   1052  CB  VAL   200     -23.575   1.661 -27.921  1.00 56.89      B    C
ATOM   1053  CG1 VAL   200     -24.037   0.602 -26.933  1.00 59.60      B    C
ATOM   1054  CG2 VAL   200     -22.390   2.424 -27.369  1.00 58.38      B    C
ATOM   1055  C   VAL   200     -22.735   2.095 -30.219  1.00 55.25      B    C
ATOM   1056  O   VAL   200     -21.632   2.629 -30.089  1.00 55.38      B    O
ATOM   1057  N   MET   201     -23.588   2.421 -31.182  1.00 53.57      B    N
ATOM   1058  CA  MET   201     -23.303   3.491 -32.122  1.00 53.33      B    C
ATOM   1059  CB  MET   201     -23.629   3.037 -33.542  1.00 57.41      B    C
ATOM   1060  CG  MET   201     -23.473   4.127 -34.587  1.00 65.55      B    C
ATOM   1061  SD  MET   201     -24.977   4.367 -35.566  1.00 76.08      B    S
ATOM   1062  CE  MET   201     -24.388   5.567 -36.805  1.00 73.70      B    C
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ATOM   1063  C   MET   201     -24.129   4.725 -31.773  1.00 50.12      B    C
ATOM   1064  O   MET   201     -25.322   4.627 -31.491  1.00 49.66      B    O
ATOM   1065  N   VAL   202     -23.486   5.885 -31.786  1.00 46.03      B    N
ATOM   1066  CA  VAL   202     -24.199   7.143 -31.616  1.00 43.65      B    C
ATOM   1067  CB  VAL   202     -23.269   8.238 -31.051  1.00 42.67      B    C
ATOM   1068  CG1 VAL   202     -24.025   9.549 -30.928  1.00 39.96      B    C
ATOM   1069  CG2 VAL   202     -22.721   7.809 -29.699  1.00 42.01      B    C
ATOM   1070  C   VAL   202     -24.724   7.609 -32.970  1.00 42.11      B    C
ATOM   1071  O   VAL   202     -23.941   7.963 -33.847  1.00 41.82      B    O
ATOM   1072  N   THR   203     -26.042   7.607 -33.146  1.00 39.83      B    N
ATOM   1073  CA  THR   203     -26.621   8.158 -34.367  1.00 39.51      B    C
ATOM   1074  CB  THR   203     -28.127   7.878 -34.458  1.00 37.45      B    C
ATOM   1075  OG1 THR   203     -28.818   8.690 -33.499  1.00 38.09      B    O
ATOM   1076  CG2 THR   203     -28.411   6.412 -34.179  1.00 33.14      B    C
ATOM   1077  C   THR   203     -26.413   9.668 -34.327  1.00 41.01      B    C
ATOM   1078  O   THR   203     -26.080  10.233 -33.284  1.00 41.22      B    O
ATOM   1079  N   ASP   204     -26.595  10.346 -35.446  1.00 41.79      B    N
ATOM   1080  CA  ASP   204     -26.440  11.786 -35.378  1.00 44.36      B    C
ATOM   1081  CB  ASP   204     -25.818  12.331 -36.671  1.00 49.04      B    C
ATOM   1082  CG  ASP   204     -26.486  11.799 -37.913  1.00 55.58      B    C
ATOM   1083  OD1 ASP   204     -27.729  11.633 -37.895  1.00 58.79      B    O
ATOM   1084  OD2 ASP   204     -25.761  11.549 -38.907  1.00 57.72      B    O
ATOM   1085  C   ASP   204     -27.752  12.495 -35.059  1.00 41.84      B    C
ATOM   1086  O   ASP   204     -27.864  13.706 -35.232  1.00 42.04      B    O
ATOM   1087  N   PHE   205     -28.737  11.745 -34.571  1.00 38.16      B    N
ATOM   1088  CA  PHE   205     -29.985  12.363 -34.147  1.00 36.96      B    C
ATOM   1089  CB  PHE   205     -31.130  11.351 -34.078  1.00 35.73      B    C
ATOM   1090  CG  PHE   205     -32.449  11.984 -33.744  1.00 36.34      B    C
ATOM   1091  CD1 PHE   205     -32.800  12.238 -32.428  1.00 34.81      B    C
ATOM   1092  CD2 PHE   205     -33.292  12.424 -34.750  1.00 36.67      B    C
ATOM   1093  CE1 PHE   205     -33.958  12.926 -32.122  1.00 34.86      B    C
ATOM   1094  CE2 PHE   205     -34.455  13.117 -34.450  1.00 36.51      B    C
ATOM   1095  CZ  PHE   205     -34.786  13.368 -33.136  1.00 36.57      B    C
ATOM   1096  C   PHE   205     -29.882  13.048 -32.787  1.00 37.17      B    C
ATOM   1097  O   PHE   205     -29.454  12.449 -31.799  1.00 35.61      B    O
ATOM   1098  N   GLU   206     -30.287  14.308 -32.741  1.00 36.47      B    N
ATOM   1099  CA  GLU   206     -30.548  14.937 -31.469  1.00 39.25      B    C
ATOM   1100  CB  GLU   206     -29.245  15.413 -30.821  1.00 43.55      B    C
ATOM   1101  CG  GLU   206     -28.695  16.714 -31.344  1.00 51.60      B    C
ATOM   1102  CD  GLU   206     -27.488  17.186 -30.544  1.00 57.35      B    C
ATOM   1103  OE1 GLU   206     -26.372  17.216 -31.118  1.00 58.84      B    O
ATOM   1104  OE2 GLU   206     -27.655  17.524 -29.344  1.00 56.01      B    O
ATOM   1105  C   GLU   206     -31.520  16.087 -31.617  1.00 37.64      B    C
ATOM   1106  O   GLU   206     -31.401  16.916 -32.526  1.00 36.38      B    O
ATOM   1107  N   ASN   207     -32.491  16.112 -30.711  1.00 34.24      B    N
ATOM   1108  CA  ASN   207     -33.505  17.155 -30.673  1.00 32.56      B    C
ATOM   1109  CB  ASN   207     -34.736  16.702 -31.466  1.00 30.25      B    C
ATOM   1110  CG  ASN   207     -35.636  17.855 -31.868  1.00 31.68      B    C
ATOM   1111  OD1 ASN   207     -35.748  18.189 -33.054  1.00 32.01      B    O
ATOM   1112  ND2 ASN   207     -36.291  18.465 -30.888  1.00 28.37      B    N
ATOM   1113  C   ASN   207     -33.864  17.364 -29.196  1.00 32.44      B    C
ATOM   1114  O   ASN   207     -34.658  16.611 -28.624  1.00 30.19      B    O
ATOM   1115  N   VAL   208     -33.257  18.374 -28.579  1.00 30.82      B    N
ATOM   1116  CA  VAL   208     -33.467  18.638 -27.163  1.00 30.29      B    C
ATOM   1117  CB  VAL   208     -32.274  18.127 -26.309  1.00 28.56      B    C
ATOM   1118  CG1 VAL   208     -32.051  16.638 -26.560  1.00 27.68      B    C
ATOM   1119  CG2 VAL   208     -31.016  18.917 -26.641  1.00 25.16      B    C
ATOM   1120  C   VAL   208     -33.628  20.134 -26.924  1.00 31.06      B    C
ATOM   1121  O   VAL   208     -33.063  20.956 -27.651  1.00 30.60      B    O
ATOM   1122  N   PRO   209     -34.408  20.503 -25.897  1.00 30.47      B    N
ATOM   1123  CD  PRO   209     -35.207  19.578 -25.072  1.00 30.10      B    C
ATOM   1124  CA  PRO   209     -34.536  21.894 -25.447  1.00 31.51      B    C
ATOM   1125  CB  PRO   209     -35.713  21.848 -24.474  1.00 31.36      B    C
ATOM   1126  CG  PRO   209     -35.683  20.448 -23.932  1.00 29.45      B    C
ATOM   1127  C   PRO   209     -33.256  22.396 -24.774  1.00 31.01      B    C
ATOM   1128  O   PRO   209     -32.478  21.612 -24.234  1.00 28.87      B    O
ATOM   1129  N   GLU   210     -33.045  23.704 -24.838  1.00 33.74      B    N
ATOM   1130  CA  GLU   210     -32.010  24.400 -24.068  1.00 36.85      B    C
ATOM   1131  CB  GLU   210     -32.237  25.908 -24.171  1.00 41.10      B    C
ATOM   1132  CG  GLU   210     -31.186  26.678 -24.925  1.00 52.07      B    C
ATOM   1133  CD  GLU   210     -31.540  28.153 -25.021  1.00 56.74      B    C
ATOM   1134  OE1 GLU   210     -32.743  28.464 -25.188  1.00 57.58      B    O
ATOM   1135  OE2 GLU   210     -30.622  29.000 -24.924  1.00 61.67      B    O
ATOM   1136  C   GLU   210     -32.079  24.017 -22.586  1.00 33.62      B    C
ATOM   1137  O   GLU   210     -33.165  23.878 -22.037  1.00 31.67      B    O
ATOM   1138  N   GLU   211     -30.927  23.878 -21.940  1.00 34.04      B    N
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ATOM   1139  CA  GLU   211     -30.877  23.780 -20.478  1.00 35.09      B    C
ATOM   1140  CB  GLU   211     -29.440  23.595 -19.993  1.00 37.07      B    C
ATOM   1141  CG  GLU   211     -28.520  22.943 -21.003  1.00 45.78      B    C
ATOM   1142  CD  GLU   211     -28.779  21.466 -21.132  1.00 49.35      B    C
ATOM   1143  OE1 GLU   211     -29.395  20.908 -20.197  1.00 53.87      B    O
ATOM   1144  OE2 GLU   211     -28.372  20.867 -22.156  1.00 49.08      B    O
ATOM   1145  C   GLU   211     -31.414  25.075 -19.887  1.00 34.57      B    C
ATOM   1146  O   GLU   211     -31.403  26.112 -20.552  1.00 33.61      B    O
ATOM   1147  N   ASP   212     -31.876  25.020 -18.640  1.00 34.88      B    N
ATOM   1148  CA  ASP   212     -32.155  26.237 -17.880  1.00 33.98      B    C
ATOM   1149  CB  ASP   212     -33.019  25.913 -16.654  1.00 36.73      B    C
ATOM   1150  CG  ASP   212     -33.263  27.131 -15.764  1.00 39.80      B    C
ATOM   1151  OD1 ASP   212     -32.845  28.252 -16.132  1.00 43.49      B    O
ATOM   1152  OD2 ASP   212     -33.873  26.965 -14.692  1.00 43.52      B    O
ATOM   1153  C   ASP   212     -30.828  26.858 -17.438  1.00 34.59      B    C
ATOM   1154  O   ASP   212     -30.185  26.385 -16.492  1.00 34.03      B    O
ATOM   1155  N   GLY   213     -30.425  27.920 -18.127  1.00 34.74      B    N
ATOM   1156  CA  GLY   213     -29.103  28.488 -17.926  1.00 35.64      B    C
ATOM   1157  C   GLY   213     -28.796  29.033 -16.535  1.00 37.75      B    C
ATOM   1158  O   GLY   213     -27.629  29.101 -16.151  1.00 38.98      B    O
ATOM   1159  N   THR   214     -29.818  29.422 -15.776  1.00 38.08      B    N
ATOM   1160  CA  THR   214     -29.594  29.989 -14.444  1.00 39.22      B    C
ATOM   1161  CB  THR   214     -30.863  30.667 -13.889  1.00 39.16      B    C
ATOM   1162  OG1 THR   214     -31.853  29.671 -13.609  1.00 42.43      B    O
ATOM   1163  CG2 THR   214     -31.427  31.653 -14.900  1.00 40.99      B    C
ATOM   1164  C   THR   214     -29.145  28.934 -13.429  1.00 38.48      B    C
ATOM   1165  O   THR   214     -28.695  29.273 -12.334  1.00 41.23      B    O
ATOM   1166  N   ARG   215     -29.278  27.661 -13.790  1.00 36.13      B    N
ATOM   1167  CA  ARG   215     -28.842  26.571 -12.926  1.00 33.09      B    C
ATOM   1168  CB  ARG   215     -30.044  25.753 -12.458  1.00 35.26      B    C
ATOM   1169  CG  ARG   215     -30.978  26.507 -11.525  1.00 39.25      B    C
ATOM   1170  CD  ARG   215     -31.976  25.562 -10.860  1.00 38.84      B    C
ATOM   1171  NE  ARG   215     -33.095  25.240 -11.741  1.00 41.79      B    N
ATOM   1172  CZ  ARG   215     -34.023  24.325 -11.469  1.00 42.83      B    C
ATOM   1173  NH1 ARG   215     -35.005  24.102 -12.330  1.00 42.89      B    N
ATOM   1174  NH2 ARG   215     -33.965  23.631 -10.341  1.00 40.76      B    N
ATOM   1175  C   ARG   215     -27.850  25.649 -13.621  1.00 31.31      B    C
ATOM   1176  O   ARG   215     -27.465  24.620 -13.072  1.00 30.45      B    O
ATOM   1177  N   PHE   216     -27.440  26.007 -14.831  1.00 29.98      B    N
ATOM   1178  CA  PHE   216     -26.577  25.126 -15.606  1.00 31.33      B    C
ATOM   1179  CB  PHE   216     -27.099  25.006 -17.041  1.00 30.11      B    C
ATOM   1180  CG  PHE   216     -26.373  23.979 -17.865  1.00 30.31      B    C
ATOM   1181  CD1 PHE   216     -25.816  24.317 -19.090  1.00 30.81      B    C
ATOM   1182  CD2 PHE   216     -26.258  22.671 -17.419  1.00 29.75      B    C
ATOM   1183  CE1 PHE   216     -25.156  23.363 -19.861  1.00 32.24      B    C
ATOM   1184  CE2 PHE   216     -25.602  21.712 -18.178  1.00 30.04      B    C
ATOM   1185  CZ  PHE   216     -25.049  22.056 -19.402  1.00 31.01      B    C
ATOM   1186  C   PHE   216     -25.122  25.604 -15.618  1.00 33.88      B    C
ATOM   1187  O   PHE   216     -24.824  26.718 -16.051  1.00 33.72      B    O
ATOM   1188  N   HIS   217     -24.226  24.750 -15.128  1.00 34.66      B    N
ATOM   1189  CA  HIS   217     -22.795  25.014 -15.165  1.00 36.02      B    C
ATOM   1190  CB  HIS   217     -22.209  25.037 -13.748  1.00 39.37      B    C
ATOM   1191  CG  HIS   217     -22.800  26.089 -12.860  1.00 44.56      B    C
ATOM   1192  CD2 HIS   217     -24.077  26.516 -12.707  1.00 46.84      B    C
ATOM   1193  ND1 HIS   217     -22.040  26.842 -11.990  1.00 47.01      B    N
ATOM   1194  CE1 HIS   217     -22.822  27.688 -11.341  1.00 46.30      B    C
ATOM   1195  NE2 HIS   217     -24.062  27.510 -11.757  1.00 48.13      B    N
ATOM   1196  C   HIS   217     -22.147  23.897 -15.962  1.00 36.30      B    C
ATOM   1197  O   HIS   217     -21.915  22.804 -15.445  1.00 35.57      B    O
ATOM   1198  N   ARG   218     -21.855  24.183 -17.223  1.00 37.33      B    N
ATOM   1199  CA  ARG   218     -21.393  23.173 -18.161  1.00 40.43      B    C
ATOM   1200  CB  ARG   218     -21.112  23.836 -19.514  1.00 43.99      B    C
ATOM   1201  CG  ARG   218     -20.457  22.930 -20.535  1.00 52.67      B    C
ATOM   1202  CD  ARG   218     -21.475  22.263 -21.444  1.00 60.20      B    C
ATOM   1203  NE  ARG   218     -21.024  20.935 -21.860  1.00 66.00      B    N
ATOM   1204  CZ  ARG   218     -21.834  19.961 -22.267  1.00 67.40      B    C
ATOM   1205  NH1 ARG   218     -21.333  18.783 -22.622  1.00 67.52      B    N
ATOM   1206  NH2 ARG   218     -23.145  20.168 -22.323  1.00 68.80      B    N
ATOM   1207  C   ARG   218     -20.150  22.423 -17.666  1.00 39.21      B    C
ATOM   1208  O   ARG   218     -20.039  21.212 -17.841  1.00 38.82      B    O
ATOM   1209  N   GLN   219     -19.220  23.136 -17.042  1.00 39.79      B    N
ATOM   1210  CA  GLN   219     -17.972  22.517 -16.608  1.00 41.38      B    C
ATOM   1211  CB  GLN   219     -16.984  23.584 -16.120  1.00 44.07      B    C
ATOM   1212  CG  GLN   219     -16.482  24.518 -17.227  1.00 53.87      B    C
ATOM   1213  CD  GLN   219     -14.958  24.512 -17.374  1.00 59.95      B    C
ATOM   1214  OE1 GLN   219     -14.421  24.216 -18.452  1.00 62.01      B    O
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ATOM   1215  NE2 GLN   219     -14.256  24.839 -16.289  1.00 62.25      B    N
ATOM   1216  C   GLN   219     -18.180  21.467 -15.519  1.00 37.67      B    C
ATOM   1217  O   GLN   219     -17.400  20.527 -15.406  1.00 37.10      B    O
ATOM   1218  N   ALA   220     -19.234  21.619 -14.725  1.00 35.89      B    N
ATOM   1219  CA  ALA   220     -19.503  20.680 -13.638  1.00 35.91      B    C
ATOM   1220  CB  ALA   220     -20.027  21.428 -12.427  1.00 33.00      B    C
ATOM   1221  C   ALA   220     -20.489  19.581 -14.037  1.00 35.70      B    C
ATOM   1222  O   ALA   220     -20.497  18.507 -13.453  1.00 36.94      B    O
ATOM   1223  N   SER   221     -21.312  19.856 -15.039  1.00 37.81      B    N
ATOM   1224  CA  SER   221     -22.373  18.941 -15.444  1.00 39.11      B    C
ATOM   1225  CB  SER   221     -23.316  19.659 -16.411  1.00 40.05      B    C
ATOM   1226  OG  SER   221     -24.304  18.777 -16.916  1.00 44.84      B    O
ATOM   1227  C   SER   221     -21.854  17.652 -16.087  1.00 38.84      B    C
ATOM   1228  O   SER   221     -20.932  17.674 -16.900  1.00 38.31      B    O
ATOM   1229  N   LYS   222     -22.449  16.525 -15.715  1.00 39.04      B    N
ATOM   1230  CA  LYS   222     -22.186  15.259 -16.396  1.00 41.16      B    C
ATOM   1231  CB  LYS   222     -22.026  14.127 -15.377  1.00 42.57      B    C
ATOM   1232  CG  LYS   222     -20.878  14.311 -14.402  1.00 46.43      B    C
ATOM   1233  CD  LYS   222     -21.183  13.589 -13.100  1.00 53.68      B    C
ATOM   1234  CE  LYS   222     -19.918  13.140 -12.377  1.00 57.05      B    C
ATOM   1235  NZ  LYS   222     -20.212  12.021 -11.418  1.00 57.68      B    N
ATOM   1236  C   LYS   222     -23.353  14.939 -17.321  1.00 41.01      B    C
ATOM   1237  O   LYS   222     -24.327  14.316 -16.904  1.00 42.43      B    O
ATOM   1238  N   CYS   223     -23.260  15.361 -18.576  1.00 41.97      B    N
ATOM   1239  CA  CYS   223     -24.398  15.259 -19.484  1.00 44.73      B    C
ATOM   1240  C   CYS   223     -24.721  13.819 -19.876  1.00 42.78      B    C
ATOM   1241  O   CYS   223     -25.844  13.528 -20.280  1.00 42.75      B    O
ATOM   1242  CB  CYS   223     -24.148  16.104 -20.745  1.00 48.24      B    C
ATOM   1243  SG  CYS   223     -24.066  17.911 -20.440  1.00 61.09      B    S
ATOM   1244  N   ASP   224     -23.736  12.931 -19.735  1.00 42.89      B    N
ATOM   1245  CA  ASP   224     -23.820  11.549 -20.215  1.00 41.94      B    C
ATOM   1246  CB  ASP   224     -22.448  11.060 -20.677  1.00 45.97      B    C
ATOM   1247  CG  ASP   224     -21.896  11.860 -21.828  1.00 51.61      B    C
ATOM   1248  OD1 ASP   224     -22.698  12.450 -22.585  1.00 55.30      B    O
ATOM   1249  OD2 ASP   224     -20.653  11.896 -21.978  1.00 55.41      B    O
ATOM   1250  C   ASP   224     -24.318  10.570 -19.163  1.00 40.44      B    C
ATOM   1251  O   ASP   224     -24.500   9.391 -19.446  1.00 40.53      B    O
ATOM   1252  N   SER   225     -24.514  11.043 -17.943  1.00 39.18      B    N
ATOM   1253  CA  SER   225     -24.670  10.136 -16.817  1.00 38.21      B    C
ATOM   1254  CB  SER   225     -24.814  10.936 -15.527  1.00 38.32      B    C
ATOM   1255  OG  SER   225     -25.257  10.088 -14.488  1.00 45.34      B    O
ATOM   1256  C   SER   225     -25.838   9.155 -16.939  1.00 35.49      B    C
ATOM   1257  O   SER   225     -25.671   7.957 -16.727  1.00 35.90      B    O
ATOM   1258  N   HIS   226     -27.018   9.664 -17.275  1.00 34.83      B    N
ATOM   1259  CA  HIS   226     -28.235   8.852 -17.285  1.00 34.19      B    C
ATOM   1260  CB  HIS   226     -29.458   9.771 -17.415  1.00 33.13      B    C
ATOM   1261  CG  HIS   226     -30.774   9.083 -17.207  1.00 34.07      B    C
ATOM   1262  CD2 HIS   226     -31.387   8.650 -16.078  1.00 33.89      B    C
ATOM   1263  ND1 HIS   226     -31.659   8.841 -18.238  1.00 33.86      B    N
ATOM   1264  CE1 HIS   226     -32.760   8.295 -17.753  1.00 34.25      B    C
ATOM   1265  NE2 HIS   226     -32.621   8.168 -16.445  1.00 35.48      B    N
ATOM   1266  C   HIS   226     -28.206   7.844 -18.440  1.00 34.61      B    C
ATOM   1267  O   HIS   226     -28.456   6.656 -18.248  1.00 34.03      B    O
ATOM   1268  N   GLY   227     -27.887   8.321 -19.639  1.00 33.03      B    N
ATOM   1269  CA  GLY   227     -27.905   7.449 -20.795  1.00 33.67      B    C
ATOM   1270  C   GLY   227     -26.827   6.378 -20.768  1.00 33.99      B    C
ATOM   1271  O   GLY   227     -27.082   5.231 -21.140  1.00 32.66      B    O
ATOM   1272  N   THR   228     -25.623   6.742 -20.332  1.00 33.72      B    N
ATOM   1273  CA  THR   228     -24.514   5.793 -20.305  1.00 35.16      B    C
ATOM   1274  CB  THR   228     -23.218   6.436 -19.759  1.00 36.04      B    C
ATOM   1275  OG1 THR   228     -22.857   7.564 -20.564  1.00 36.59      B    O
ATOM   1276  CG2 THR   228     -22.085   5.427 -19.778  1.00 35.96      B    C
ATOM   1277  C   THR   228     -24.866   4.620 -19.399  1.00 35.86      B    C
ATOM   1278  O   THR   228     -24.596   3.459 -19.716  1.00 34.91      B    O
ATOM   1279  N   HIS   229     -25.473   4.933 -18.262  1.00 36.05      B    N
ATOM   1280  CA  HIS   229     -25.755   3.920 -17.264  1.00 35.40      B    C
ATOM   1281  CB  HIS   229     -26.279   4.582 -15.990  1.00 35.21      B    C
ATOM   1282  CG  HIS   229     -26.547   3.619 -14.879  1.00 34.42      B    C
ATOM   1283  CD2 HIS   229     -25.754   3.166 -13.879  1.00 35.18      B    C
ATOM   1284  ND1 HIS   229     -27.758   2.981 -14.726  1.00 36.17      B    N
ATOM   1285  CE1 HIS   229     -27.700   2.173 -13.681  1.00 38.58      B    C
ATOM   1286  NE2 HIS   229     -26.494   2.267 -13.150  1.00 37.21      B    N
ATOM   1287  C   HIS   229     -26.787   2.947 -17.817  1.00 36.81      B    C
ATOM   1288  O   HIS   229     -26.699   1.736 -17.603  1.00 37.62      B    O
ATOM   1289  N   LEU   230     -27.764   3.486 -18.540  1.00 37.41      B    N
ATOM   1290  CA  LEU   230     -28.840   2.674 -19.092  1.00 36.89      B    C
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ATOM   1291  CB  LEU   230     -29.971   3.580 -19.591  1.00 35.14      B    C
ATOM   1292  CG  LEU   230     -30.761   4.295 -18.489  1.00 36.53      B    C
ATOM   1293  CD1 LEU   230     -31.805   5.216 -19.118  1.00 34.66      B    C
ATOM   1294  CD2 LEU   230     -31.430   3.263 -17.585  1.00 31.80      B    C
ATOM   1295  C   LEU   230     -28.345   1.773 -20.224  1.00 37.42      B    C
ATOM   1296  O   LEU   230     -28.719   0.602 -20.300  1.00 37.18      B    O
ATOM   1297  N   ALA   231     -27.505   2.317 -21.099  1.00 36.72      B    N
ATOM   1298  CA  ALA   231     -26.895   1.514 -22.154  1.00 37.67      B    C
ATOM   1299  CB  ALA   231     -25.934   2.365 -22.967  1.00 38.58      B    C
ATOM   1300  C   ALA   231     -26.145   0.353 -21.506  1.00 38.18      B    C
ATOM   1301  O   ALA   231     -26.195  -0.781 -21.985  1.00 38.02      B    O
ATOM   1302  N   GLY   232     -25.466   0.650 -20.403  1.00 37.63      B    N
ATOM   1303  CA  GLY   232     -24.740  -0.371 -19.674  1.00 37.42      B    C
ATOM   1304  C   GLY   232     -25.634  -1.433 -19.062  1.00 39.21      B    C
ATOM   1305  O   GLY   232     -25.294  -2.620 -19.096  1.00 39.54      B    O
ATOM   1306  N   VAL   233     -26.774  -1.025 -18.504  1.00 37.80      B    N
ATOM   1307  CA  VAL   233     -27.706  -1.991 -17.932  1.00 36.04      B    C
ATOM   1308  CB  VAL   233     -28.907  -1.305 -17.247  1.00 34.34      B    C
ATOM   1309  CG1 VAL   233     -29.925  -2.348 -16.842  1.00 32.45      B    C
ATOM   1310  CG2 VAL   233     -28.446  -0.528 -16.024  1.00 32.92      B    C
ATOM   1311  C   VAL   233     -28.246  -2.917 -19.014  1.00 37.82      B    C
ATOM   1312  O   VAL   233     -28.417  -4.113 -18.788  1.00 38.19      B    O
ATOM   1313  N   VAL   234     -28.514  -2.363 -20.191  1.00 38.91      B    N
ATOM   1314  CA  VAL   234     -29.036  -3.164 -21.291  1.00 39.62      B    C
ATOM   1315  CB  VAL   234     -29.552  -2.271 -22.453  1.00 39.19      B    C
ATOM   1316  CG1 VAL   234     -29.920  -3.138 -23.640  1.00 37.07      B    C
ATOM   1317  CG2 VAL   234     -30.775  -1.470 -22.005  1.00 38.06      B    C
ATOM   1318  C   VAL   234     -27.980  -4.127 -21.849  1.00 41.00      B    C
ATOM   1319  O   VAL   234     -28.241  -5.323 -22.000  1.00 38.81      B    O
ATOM   1320  N   SER   235     -26.788  -3.609 -22.141  1.00 41.61      B    N
ATOM   1321  CA  SER   235     -25.837  -4.343 -22.969  1.00 43.40      B    C
ATOM   1322  CB  SER   235     -25.888  -3.804 -24.395  1.00 43.13      B    C
ATOM   1323  OG  SER   235     -25.378  -2.486 -24.430  1.00 43.09      B    O
ATOM   1324  C   SER   235     -24.384  -4.320 -22.493  1.00 44.31      B    C
ATOM   1325  O   SER   235     -23.488  -4.670 -23.256  1.00 44.63      B    O
ATOM   1326  N   GLY   236     -24.141  -3.903 -21.255  1.00 44.68      B    N
ATOM   1327  CA  GLY   236     -22.771  -3.852 -20.768  1.00 47.17      B    C
ATOM   1328  C   GLY   236     -22.139  -5.234 -20.731  1.00 48.76      B    C
ATOM   1329  O   GLY   236     -22.823  -6.220 -20.447  1.00 47.27      B    O
ATOM   1330  N   ARG   237     -20.840  -5.327 -21.011  1.00 50.91      B    N
ATOM   1331  CA  ARG   237     -20.216  -6.644 -21.113  1.00 54.98      B    C
ATOM   1332  CB  ARG   237     -18.866  -6.565 -21.839  1.00 57.32      B    C
ATOM   1333  CG  ARG   237     -17.921  -5.481 -21.369  1.00 62.69      B    C
ATOM   1334  CD  ARG   237     -16.673  -5.455 -22.254  1.00 67.42      B    C
ATOM   1335  NE  ARG   237     -16.997  -5.685 -23.664  1.00 72.57      B    N
ATOM   1336  CZ  ARG   237     -16.678  -4.861 -24.663  1.00 74.70      B    C
ATOM   1337  NH1 ARG   237     -17.021  -5.164 -25.911  1.00 74.47      B    N
ATOM   1338  NH2 ARG   237     -16.013  -3.737 -24.420  1.00 75.30      B    N
ATOM   1339  C   ARG   237     -20.047  -7.351 -19.772  1.00 54.54      B    C
ATOM   1340  O   ARG   237     -20.056  -8.578 -19.716  1.00 56.23      B    O
ATOM   1341  N   ASP   238     -19.911  -6.584 -18.694  1.00 54.25      B    N
ATOM   1342  CA  ASP   238     -19.780  -7.167 -17.362  1.00 54.09      B    C
ATOM   1343  CB  ASP   238     -18.663  -6.463 -16.580  1.00 56.58      B    C
ATOM   1344  CG  ASP   238     -17.288  -6.673 -17.199  1.00 59.27      B    C
ATOM   1345  OD1 ASP   238     -17.167  -7.481 -18.144  1.00 60.55      B    O
ATOM   1346  OD2 ASP   238     -16.323  -6.026 -16.738  1.00 61.66      B    O
ATOM   1347  C   ASP   238     -21.077  -7.101 -16.556  1.00 53.15      B    C
ATOM   1348  O   ASP   238     -21.436  -8.060 -15.875  1.00 52.85      B    O
ATOM   1349  N   ALA   239     -21.775  -5.970 -16.627  1.00 52.70      B    N
ATOM   1350  CA  ALA   239     -22.913  -5.727 -15.742  1.00 50.29      B    C
ATOM   1351  CB  ALA   239     -22.663  -4.476 -14.915  1.00 49.27      B    C
ATOM   1352  C   ALA   239     -24.243  -5.607 -16.483  1.00 49.76      B    C
ATOM   1353  O   ALA   239     -25.267  -5.280 -15.881  1.00 48.97      B    O
ATOM   1354  N   GLY   240     -24.229  -5.881 -17.783  1.00 48.12      B    N
ATOM   1355  CA  GLY   240     -25.448  -5.783 -18.566  1.00 47.47      B    C
ATOM   1356  C   GLY   240     -26.327  -7.023 -18.552  1.00 47.44      B    C
ATOM   1357  O   GLY   240     -25.912  -8.098 -18.113  1.00 48.79      B    O
ATOM   1358  N   VAL   241     -27.553  -6.872 -19.042  1.00 46.01      B    N
ATOM   1359  CA  VAL   241     -28.499  -7.977 -19.115  1.00 45.03      B    C
ATOM   1360  CB  VAL   241     -29.949  -7.465 -19.065  1.00 43.05      B    C
ATOM   1361  CG1 VAL   241     -30.907  -8.578 -19.431  1.00 39.38      B    C
ATOM   1362  CG2 VAL   241     -30.261  -6.939 -17.668  1.00 42.38      B    C
ATOM   1363  C   VAL   241     -28.307  -8.797 -20.388  1.00 47.14      B    C
ATOM   1364  O   VAL   241     -28.223 -10.025 -20.334  1.00 47.85      B    O
ATOM   1365  N   ALA   242     -28.243  -8.114 -21.528  1.00 46.60      B    N
ATOM   1366  CA  ALA   242     -27.917  -8.759 -22.797  1.00 48.43      B    C
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ATOM   1367  CB  ALA   242     -28.913  -8.342 -23.873  1.00 45.85      B    C
ATOM   1368  C   ALA   242     -26.504  -8.350 -23.202  1.00 50.23      B    C
ATOM   1369  O   ALA   242     -26.312  -7.414 -23.983  1.00 50.74      B    O
ATOM   1370  N   LYS   243     -25.517  -9.058 -22.663  1.00 51.90      B    N
ATOM   1371  CA  LYS   243     -24.134  -8.615 -22.748  1.00 53.47      B    C
ATOM   1372  CB  LYS   243     -23.239  -9.546 -21.923  1.00 54.37      B    C
ATOM   1373  CG  LYS   243     -23.605  -9.581 -20.437  1.00 56.48      B    C
ATOM   1374  CD  LYS   243     -22.714 -10.528 -19.649  1.00 57.08      B    C
ATOM   1375  CE  LYS   243     -23.346 -10.907 -18.314  1.00 58.87      B    C
ATOM   1376  NZ  LYS   243     -23.227  -9.834 -17.291  1.00 59.43      B    N
ATOM   1377  C   LYS   243     -23.658  -8.552 -24.196  1.00 53.57      B    C
ATOM   1378  O   LYS   243     -23.857  -9.491 -24.972  1.00 53.48      B    O
ATOM   1379  N   GLY   244     -23.047  -7.425 -24.555  1.00 53.12      B    N
ATOM   1380  CA  GLY   244     -22.519  -7.255 -25.896  1.00 51.90      B    C
ATOM   1381  C   GLY   244     -23.555  -6.909 -26.952  1.00 52.11      B    C
ATOM   1382  O   GLY   244     -23.209  -6.729 -28.121  1.00 51.13      B    O
ATOM   1383  N   ALA   245     -24.823  -6.810 -26.557  1.00 51.54      B    N
ATOM   1384  CA  ALA   245     -25.892  -6.538 -27.517  1.00 49.79      B    C
ATOM   1385  CB  ALA   245     -27.240  -6.513 -26.814  1.00 49.57      B    C
ATOM   1386  C   ALA   245     -25.663  -5.221 -28.248  1.00 48.94      B    C
ATOM   1387  O   ALA   245     -25.013  -4.308 -27.732  1.00 50.04      B    O
ATOM   1388  N   SER   246     -26.206  -5.135 -29.455  1.00 47.10      B    N
ATOM   1389  CA  SER   246     -25.985  -3.992 -30.326  1.00 46.40      B    C
ATOM   1390  CB  SER   246     -26.152  -4.432 -31.785  1.00 46.20      B    C
ATOM   1391  OG  SER   246     -26.115  -3.332 -32.676  1.00 49.27      B    O
ATOM   1392  C   SER   246     -26.971  -2.866 -29.992  1.00 46.30      B    C
ATOM   1393  O   SER   246     -28.166  -3.109 -29.813  1.00 46.52      B    O
ATOM   1394  N   MET   247     -26.475  -1.635 -29.909  1.00 44.47      B    N
ATOM   1395  CA  MET   247     -27.341  -0.506 -29.591  1.00 43.77      B    C
ATOM   1396  CB  MET   247     -27.184  -0.116 -28.120  1.00 44.42      B    C
ATOM   1397  CG  MET   247     -27.610  -1.193 -27.145  1.00 47.82      B    C
ATOM   1398  SD  MET   247     -27.687  -0.576 -25.455  1.00 51.27      B    S
ATOM   1399  CE  MET   247     -29.166   0.438 -25.535  1.00 48.79      B    C
ATOM   1400  C   MET   247     -27.092   0.718 -30.464  1.00 42.00      B    C
ATOM   1401  O   MET   247     -25.972   0.962 -30.916  1.00 39.97      B    O
ATOM   1402  N   ARG   248     -28.155   1.480 -30.694  1.00 39.53      B    N
ATOM   1403  CA  ARG   248     -28.057   2.770 -31.359  1.00 39.90      B    C
ATOM   1404  CB  ARG   248     -28.716   2.699 -32.739  1.00 42.19      B    C
ATOM   1405  CG  ARG   248     -28.111   1.636 -33.646  1.00 47.22      B    C
ATOM   1406  CD  ARG   248     -28.800   1.575 -35.001  1.00 52.45      B    C
ATOM   1407  NE  ARG   248     -28.003   2.220 -36.040  1.00 59.77      B    N
ATOM   1408  CZ  ARG   248     -28.404   3.269 -36.754  1.00 64.16      B    C
ATOM   1409  NH1 ARG   248     -27.599   3.789 -37.674  1.00 65.74      B    N
ATOM   1410  NH2 ARG   248     -29.609   3.798 -36.560  1.00 65.15      B    N
ATOM   1411  C   ARG   248     -28.751   3.816 -30.492  1.00 39.62      B    C
ATOM   1412  O   ARG   248     -29.907   3.641 -30.096  1.00 39.17      B    O
ATOM   1413  N   SER   249     -28.047   4.901 -30.185  1.00 37.99      B    N
ATOM   1414  CA  SER   249     -28.588   5.898 -29.280  1.00 37.24      B    C
ATOM   1415  CB  SER   249     -27.549   6.265 -28.214  1.00 36.64      B    C
ATOM   1416  OG  SER   249     -26.336   6.689 -28.805  1.00 42.82      B    O
ATOM   1417  C   SER   249     -29.048   7.147 -30.020  1.00 36.18      B    C
ATOM   1418  O   SER   249     -28.395   7.608 -30.960  1.00 36.34      B    O
ATOM   1419  N   LEU   250     -30.192   7.674 -29.595  1.00 33.93      B    N
ATOM   1420  CA  LEU   250     -30.690   8.965 -30.062  1.00 33.58      B    C
ATOM   1421  CB  LEU   250     -32.085   8.810 -30.683  1.00 31.97      B    C
ATOM   1422  CG  LEU   250     -32.225   8.090 -32.028  1.00 35.15      B    C
ATOM   1423  CD1 LEU   250     -31.875   6.607 -31.885  1.00 32.63      B    C
ATOM   1424  CD2 LEU   250     -33.649   8.262 -32.537  1.00 29.57      B    C
ATOM   1425  C   LEU   250     -30.784   9.893 -28.853  1.00 32.36      B    C
ATOM   1426  O   LEU   250     -31.214   9.472 -27.778  1.00 32.19      B    O
ATOM   1427  N   ARG   251     -30.403  11.153 -29.024  1.00 31.24      B    N
ATOM   1428  CA  ARG   251     -30.497  12.105 -27.924  1.00 31.28      B    C
ATOM   1429  CB  ARG   251     -29.299  13.049 -27.937  1.00 32.49      B    C
ATOM   1430  CG  ARG   251     -29.320  14.019 -26.778  1.00 34.71      B    C
ATOM   1431  CD  ARG   251     -28.075  14.868 -26.739  1.00 35.70      B    C
ATOM   1432  NE  ARG   251     -27.962  15.534 -25.447  1.00 39.37      B    N
ATOM   1433  CZ  ARG   251     -27.585  16.796 -25.294  1.00 38.08      B    C
ATOM   1434  NH1 ARG   251     -27.282  17.528 -26.356  1.00 38.81      B    N
ATOM   1435  NH2 ARG   251     -27.518  17.322 -24.082  1.00 38.72      B    N
ATOM   1436  C   ARG   251     -31.785  12.929 -27.951  1.00 30.86      B    C
ATOM   1437  O   ARG   251     -31.947  13.813 -28.800  1.00 31.68      B    O
ATOM   1438  N   VAL   252     -32.697  12.643 -27.021  1.00 28.82      B    N
ATOM   1439  CA  VAL   252     -33.927  13.423 -26.892  1.00 28.33      B    C
ATOM   1440  CB  VAL   252     -35.187  12.564 -27.173  1.00 28.02      B    C
ATOM   1441  CG1 VAL   252     -35.122  12.000 -28.589  1.00 27.63      B    C
ATOM   1442  CG2 VAL   252     -35.295  11.437 -26.162  1.00 25.95      B    C
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ATOM   1443  C   VAL   252     -34.084  14.077 -25.521  1.00 27.82      B    C
ATOM   1444  O   VAL   252     -35.091  14.727 -25.259  1.00 28.30      B    O
ATOM   1445  N   LEU   253     -33.092  13.897 -24.652  1.00 26.78      B    N
ATOM   1446  CA  LEU   253     -33.075  14.563 -23.349  1.00 27.02      B    C
ATOM   1447  CB  LEU   253     -33.128  13.527 -22.222  1.00 23.74      B    C
ATOM   1448  CG  LEU   253     -34.374  12.643 -22.136  1.00 24.22      B    C
ATOM   1449  CD1 LEU   253     -34.152  11.582 -21.061  1.00 23.90      B    C
ATOM   1450  CD2 LEU   253     -35.602  13.489 -21.807  1.00 21.35      B    C
ATOM   1451  C   LEU   253     -31.798  15.387 -23.223  1.00 25.77      B    C
ATOM   1452  O   LEU   253     -30.723  14.910 -23.570  1.00 26.91      B    O
ATOM   1453  N   ASN   254     -31.908  16.619 -22.732  1.00 26.13      B    N
ATOM   1454  CA  ASN   254     -30.723  17.458 -22.575  1.00 26.64      B    C
ATOM   1455  CB  ASN   254     -31.111  18.945 -22.552  1.00 24.80      B    C
ATOM   1456  CG  ASN   254     -31.999  19.309 -21.380  1.00 25.34      B    C
ATOM   1457  OD1 ASN   254     -32.052  18.598 -20.374  1.00 22.46      B    O
ATOM   1458  ND2 ASN   254     -32.704  20.430 -21.505  1.00 22.21      B    N
ATOM   1459  C   ASN   254     -29.940  17.088 -21.314  1.00 27.37      B    C
ATOM   1460  O   ASN   254     -30.229  16.079 -20.670  1.00 25.26      B    O
ATOM   1461  N   CYS   255     -28.941  17.898 -20.974  1.00 28.60      B    N
ATOM   1462  CA  CYS   255     -28.069  17.609 -19.837  1.00 31.55      B    C
ATOM   1463  C   CYS   255     -28.845  17.611 -18.526  1.00 29.84      B    C
ATOM   1464  O   CYS   255     -28.449  16.956 -17.561  1.00 29.79      B    O
ATOM   1465  CB  CYS   255     -26.944  18.643 -19.756  1.00 39.06      B    C
ATOM   1466  SG  CYS   255     -25.816  18.660 -21.190  1.00 50.83      B    S
ATOM   1467  N   GLN   256     -29.948  18.350 -18.499  1.00 25.96      B    N
ATOM   1468  CA  GLN   256     -30.795  18.413 -17.319  1.00 25.56      B    C
ATOM   1469  CB  GLN   256     -31.304  19.855 -17.118  1.00 26.50      B    C
ATOM   1470  CG  GLN   256     -30.203  20.805 -16.621  1.00 27.07      B    C
ATOM   1471  CD  GLN   256     -30.618  22.269 -16.546  1.00 29.99      B    C
ATOM   1472  OE1 GLN   256     -31.569  22.698 -17.202  1.00 29.18      B    O
ATOM   1473  NE2 GLN   256     -29.889  23.051 -15.740  1.00 28.68      B    N
ATOM   1474  C   GLN   256     -31.955  17.422 -17.400  1.00 25.12      B    C
ATOM   1475  O   GLN   256     -32.960  17.577 -16.714  1.00 25.75      B    O
ATOM   1476  N   GLY   257     -31.806  16.393 -18.231  1.00 25.10      B    N
ATOM   1477  CA  GLY   257     -32.761  15.291 -18.221  1.00 24.84      B    C
ATOM   1478  C   GLY   257     -34.124  15.640 -18.805  1.00 26.13      B    C
ATOM   1479  O   GLY   257     -35.115  14.940 -18.570  1.00 24.93      B    O
ATOM   1480  N   LYS   258     -34.183  16.722 -19.571  1.00 24.07      B    N
ATOM   1481  CA  LYS   258     -35.462  17.231 -20.040  1.00 28.15      B    C
ATOM   1482  CB  LYS   258     -35.657  18.660 -19.522  1.00 32.37      B    C
ATOM   1483  CG  LYS   258     -37.070  19.183 -19.644  1.00 39.14      B    C
ATOM   1484  CD  LYS   258     -37.359  20.253 -18.588  1.00 41.81      B    C
ATOM   1485  CE  LYS   258     -37.363  21.648 -19.204  1.00 45.11      B    C
ATOM   1486  NZ  LYS   258     -38.425  22.526 -18.618  1.00 47.02      B    N
ATOM   1487  C   LYS   258     -35.557  17.191 -21.568  1.00 27.03      B    C
ATOM   1488  O   LYS   258     -34.595  17.513 -22.274  1.00 25.30      B    O
ATOM   1489  N   GLY   259     -36.715  16.771 -22.072  1.00 26.32      B    N
ATOM   1490  CA  GLY   259     -36.963  16.800 -23.507  1.00 25.87      B    C
ATOM   1491  C   GLY   259     -38.363  17.309 -23.804  1.00 26.15      B    C
ATOM   1492  O   GLY   259     -39.028  17.847 -22.920  1.00 25.50      B    O
ATOM   1493  N   THR   260     -38.822  17.143 -25.041  1.00 25.47      B    N
ATOM   1494  CA  THR   260     -40.191  17.523 -25.394  1.00 25.25      B    C
ATOM   1495  CB  THR   260     -40.210  18.742 -26.335  1.00 25.76      B    C
ATOM   1496  OG1 THR   260     -39.565  18.402 -27.572  1.00 24.26      B    O
ATOM   1497  CG2 THR   260     -39.479  19.921 -25.689  1.00 22.58      B    C
ATOM   1498  C   THR   260     -40.920  16.377 -26.082  1.00 24.53      B    C
ATOM   1499  O   THR   260     -40.289  15.486 -26.647  1.00 25.79      B    O
ATOM   1500  N   VAL   261     -42.248  16.393 -26.027  1.00 25.73      B    N
ATOM   1501  CA  VAL   261     -43.038  15.432 -26.789  1.00 25.75      B    C
ATOM   1502  CB  VAL   261     -44.558  15.676 -26.619  1.00 25.68      B    C
ATOM   1503  CG1 VAL   261     -45.328  14.955 -27.717  1.00 23.94      B    C
ATOM   1504  CG2 VAL   261     -45.019  15.164 -25.262  1.00 24.05      B    C
ATOM   1505  C   VAL   261     -42.682  15.543 -28.271  1.00 27.72      B    C
ATOM   1506  O   VAL   261     -42.517  14.534 -28.953  1.00 28.50      B    O
ATOM   1507  N   SER   262     -42.542  16.768 -28.766  1.00 26.86      B    N
ATOM   1508  CA  SER   262     -42.305  16.961 -30.193  1.00 28.93      B    C
ATOM   1509  CB  SER   262     -42.371  18.457 -30.557  1.00 28.78      B    C
ATOM   1510  OG  SER   262     -41.371  19.209 -29.887  1.00 30.58      B    O
ATOM   1511  C   SER   262     -40.955  16.370 -30.599  1.00 29.25      B    C
ATOM   1512  O   SER   262     -40.839  15.735 -31.655  1.00 30.56      B    O
ATOM   1513  N   GLY   263     -39.943  16.561 -29.756  1.00 27.34      B    N
ATOM   1514  CA  GLY   263     -38.631  16.013 -30.051  1.00 25.52      B    C
ATOM   1515  C   GLY   263     -38.647  14.496 -30.038  1.00 27.31      B    C
ATOM   1516  O   GLY   263     -37.978  13.841 -30.836  1.00 27.93      B    O
ATOM   1517  N   THR   264     -39.429  13.930 -29.130  1.00 27.25      B    N
ATOM   1518  CA  THR   264     -39.541  12.487 -29.020  1.00 27.72      B    C
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ATOM   1519  CB  THR   264     -40.297  12.112 -27.718  1.00 30.16      B    C
ATOM   1520  OG1 THR   264     -39.571  12.628 -26.588  1.00 30.13      B    O
ATOM   1521  CG2 THR   264     -40.431  10.597 -27.581  1.00 29.89      B    C
ATOM   1522  C   THR   264     -40.250  11.899 -30.253  1.00 28.07      B    C
ATOM   1523  O   THR   264     -39.831  10.866 -30.775  1.00 28.06      B    O
ATOM   1524  N   LEU   265     -41.305  12.562 -30.724  1.00 26.93      B    N
ATOM   1525  CA  LEU   265     -41.970  12.162 -31.962  1.00 29.22      B    C
ATOM   1526  CB  LEU   265     -43.076  13.152 -32.324  1.00 32.15      B    C
ATOM   1527  CG  LEU   265     -44.282  13.225 -31.394  1.00 36.81      B    C
ATOM   1528  CD1 LEU   265     -45.239  14.303 -31.906  1.00 37.93      B    C
ATOM   1529  CD2 LEU   265     -44.970  11.868 -31.331  1.00 35.61      B    C
ATOM   1530  C   LEU   265     -40.984  12.092 -33.126  1.00 28.75      B    C
ATOM   1531  O   LEU   265     -40.900  11.089 -33.824  1.00 30.75      B    O
ATOM   1532  N   ILE   266     -40.238  13.168 -33.325  1.00 28.71      B    N
ATOM   1533  CA  ILE   266     -39.268  13.236 -34.400  1.00 28.41      B    C
ATOM   1534  CB  ILE   266     -38.591  14.620 -34.408  1.00 27.07      B    C
ATOM   1535  CG2 ILE   266     -37.539  14.694 -35.506  1.00 24.79      B    C
ATOM   1536  CG1 ILE   266     -39.657  15.701 -34.618  1.00 28.34      B    C
ATOM   1537  CD1 ILE   266     -39.111  17.116 -34.626  1.00 27.25      B    C
ATOM   1538  C   ILE   266     -38.219  12.128 -34.261  1.00 30.28      B    C
ATOM   1539  O   ILE   266     -37.689  11.636 -35.252  1.00 31.29      B    O
ATOM   1540  N   GLY   267     -37.928  11.726 -33.030  1.00 31.04      B    N
ATOM   1541  CA  GLY   267     -36.995  10.633 -32.829  1.00 30.24      B    C
ATOM   1542  C   GLY   267     -37.617   9.293 -33.185  1.00 31.88      B    C
ATOM   1543  O   GLY   267     -36.952   8.420 -33.746  1.00 30.74      B    O
ATOM   1544  N   LEU   268     -38.897   9.124 -32.865  1.00 31.46      B    N
ATOM   1545  CA  LEU   268     -39.597   7.900 -33.224  1.00 33.36      B    C
ATOM   1546  CB  LEU   268     -40.980   7.857 -32.566  1.00 29.79      B    C
ATOM   1547  CG  LEU   268     -40.963   7.777 -31.034  1.00 30.96      B    C
ATOM   1548  CD1 LEU   268     -42.378   7.836 -30.496  1.00 28.19      B    C
ATOM   1549  CD2 LEU   268     -40.279   6.495 -30.593  1.00 30.02      B    C
ATOM   1550  C   LEU   268     -39.732   7.805 -34.744  1.00 34.79      B    C
ATOM   1551  O   LEU   268     -39.605   6.726 -35.316  1.00 36.35      B    O
ATOM   1552  N   GLU   269     -39.970   8.934 -35.399  1.00 35.31      B    N
ATOM   1553  CA  GLU   269     -40.034   8.948 -36.857  1.00 37.68      B    C
ATOM   1554  CB  GLU   269     -40.449  10.332 -37.356  1.00 38.65      B    C
ATOM   1555  CG  GLU   269     -40.399  10.460 -38.862  1.00 45.31      B    C
ATOM   1556  CD  GLU   269     -40.936  11.789 -39.363  1.00 49.12      B    C
ATOM   1557  OE1 GLU   269     -40.121  12.707 -39.599  1.00 50.11      B    O
ATOM   1558  OE2 GLU   269     -42.171  11.908 -39.523  1.00 51.18      B    O
ATOM   1559  C   GLU   269     -38.687   8.555 -37.479  1.00 36.64      B    C
ATOM   1560  O   GLU   269     -38.640   7.837 -38.473  1.00 35.50      B    O
ATOM   1561  N   PHE   270     -37.599   9.029 -36.882  1.00 35.93      B    N
ATOM   1562  CA  PHE   270     -36.251   8.670 -37.310  1.00 35.58      B    C
ATOM   1563  CB  PHE   270     -35.221   9.347 -36.399  1.00 35.25      B    C
ATOM   1564  CG  PHE   270     -33.793   8.989 -36.712  1.00 33.73      B    C
ATOM   1565  CD1 PHE   270     -33.013   9.819 -37.505  1.00 35.52      B    C
ATOM   1566  CD2 PHE   270     -33.219   7.841 -36.190  1.00 34.10      B    C
ATOM   1567  CE1 PHE   270     -31.679   9.511 -37.770  1.00 35.84      B    C
ATOM   1568  CE2 PHE   270     -31.890   7.527 -36.451  1.00 36.68      B    C
ATOM   1569  CZ  PHE   270     -31.119   8.365 -37.243  1.00 34.03      B    C
ATOM   1570  C   PHE   270     -36.050   7.159 -37.272  1.00 35.72      B    C
ATOM   1571  O   PHE   270     -35.440   6.587 -38.167  1.00 34.84      B    O
ATOM   1572  N   ILE   271     -36.556   6.522 -36.222  1.00 37.31      B    N
ATOM   1573  CA  ILE   271     -36.427   5.083 -36.064  1.00 37.51      B    C
ATOM   1574  CB  ILE   271     -36.898   4.639 -34.662  1.00 36.29      B    C
ATOM   1575  CG2 ILE   271     -37.081   3.123 -34.616  1.00 35.12      B    C
ATOM   1576  CG1 ILE   271     -35.873   5.088 -33.615  1.00 37.36      B    C
ATOM   1577  CD1 ILE   271     -36.342   4.928 -32.182  1.00 35.75      B    C
ATOM   1578  C   ILE   271     -37.243   4.359 -37.126  1.00 39.47      B    C
ATOM   1579  O   ILE   271     -36.798   3.364 -37.689  1.00 39.37      B    O
ATOM   1580  N   ARG   272     -38.439   4.864 -37.395  1.00 41.04      B    N
ATOM   1581  CA  ARG   272     -39.271   4.311 -38.448  1.00 44.21      B    C
ATOM   1582  CB  ARG   272     -40.590   5.078 -38.516  1.00 44.70      B    C
ATOM   1583  CG  ARG   272     -41.536   4.599 -39.595  1.00 47.39      B    C
ATOM   1584  CD  ARG   272     -41.632   3.085 -39.624  1.00 49.12      B    C
ATOM   1585  NE  ARG   272     -42.740   2.650 -40.470  1.00 54.01      B    N
ATOM   1586  CZ  ARG   272     -42.873   1.425 -40.970  1.00 53.68      B    C
ATOM   1587  NH1 ARG   272     -43.923   1.138 -41.727  1.00 53.00      B    N
ATOM   1588  NH2 ARG   272     -41.961   0.492 -40.723  1.00 51.99      B    N
ATOM   1589  C   ARG   272     -38.532   4.409 -39.781  1.00 46.71      B    C
ATOM   1590  O   ARG   272     -38.598   3.501 -40.607  1.00 45.87      B    O
ATOM   1591  N   LYS   273     -37.811   5.509 -39.969  1.00 49.33      B    N
ATOM   1592  CA  LYS   273     -37.071   5.752 -41.200  1.00 52.95      B    C
ATOM   1593  CB  LYS   273     -36.497   7.171 -41.189  1.00 55.26      B    C
ATOM   1594  CG  LYS   273     -36.154   7.732 -42.556  1.00 58.76      B    C
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ATOM   1595  CD  LYS   273     -37.012   8.960 -42.878  1.00 63.12      B    C
ATOM   1596  CE  LYS   273     -36.916  10.023 -41.780  1.00 66.31      B    C
ATOM   1597  NZ  LYS   273     -37.681  11.264 -42.104  1.00 67.27      B    N
ATOM   1598  C   LYS   273     -35.937   4.740 -41.351  1.00 54.29      B    C
ATOM   1599  O   LYS   273     -35.729   4.192 -42.428  1.00 54.42      B    O
ATOM   1600  N   SER   274     -35.212   4.492 -40.265  1.00 56.43      B    N
ATOM   1601  CA  SER   274     -34.101   3.547 -40.283  1.00 59.57      B    C
ATOM   1602  CB  SER   274     -33.378   3.548 -38.936  1.00 59.27      B    C
ATOM   1603  OG  SER   274     -32.785   4.806 -38.679  1.00 63.53      B    O
ATOM   1604  C   SER   274     -34.588   2.137 -40.578  1.00 61.72      B    C
ATOM   1605  O   SER   274     -33.957   1.398 -41.327  1.00 62.46      B    O
ATOM   1606  N   GLN   275     -35.717   1.774 -39.980  1.00 63.45      B    N
ATOM   1607  CA  GLN   275     -36.247   0.423 -40.080  1.00 65.81      B    C
ATOM   1608  CB  GLN   275     -37.531   0.308 -39.258  1.00 63.90      B    C
ATOM   1609  CG  GLN   275     -38.092  -1.096 -39.169  1.00 62.86      B    C
ATOM   1610  CD  GLN   275     -39.504  -1.118 -38.619  1.00 61.93      B    C
ATOM   1611  OE1 GLN   275     -40.202  -0.105 -38.636  1.00 62.80      B    O
ATOM   1612  NE2 GLN   275     -39.932  -2.275 -38.129  1.00 60.07      B    N
ATOM   1613  C   GLN   275     -36.530   0.032 -41.528  1.00 68.65      B    C
ATOM   1614  O   GLN   275     -36.466  -1.146 -41.886  1.00 69.70      B    O
ATOM   1615  N   LEU   276     -36.838   1.021 -42.359  1.00 71.49      B    N
ATOM   1616  CA  LEU   276     -37.200   0.763 -43.748  1.00 75.33      B    C
ATOM   1617  CB  LEU   276     -37.977   1.950 -44.316  1.00 73.74      B    C
ATOM   1618  CG  LEU   276     -39.275   2.267 -43.577  1.00 73.60      B    C
ATOM   1619  CD1 LEU   276     -39.941   3.488 -44.189  1.00 72.59      B    C
ATOM   1620  CD2 LEU   276     -40.191   1.060 -43.637  1.00 72.21      B    C
ATOM   1621  C   LEU   276     -35.981   0.489 -44.621  1.00 78.31      B    C
ATOM   1622  O   LEU   276     -35.921  -0.525 -45.315  1.00 80.06      B    O
ATOM   1623  N   VAL   277     -35.008   1.392 -44.581  1.00 81.41      B    N
ATOM   1624  CA  VAL   277     -33.861   1.310 -45.475  1.00 84.34      B    C
ATOM   1625  CB  VAL   277     -33.217   2.702 -45.684  1.00 84.33      B    C
ATOM   1626  CG1 VAL   277     -32.431   3.098 -44.444  1.00 83.58      B    C
ATOM   1627  CG2 VAL   277     -32.328   2.690 -46.925  1.00 84.75      B    C
ATOM   1628  C   VAL   277     -32.803   0.357 -44.921  1.00 86.12      B    C
ATOM   1629  O   VAL   277     -31.731   0.196 -45.505  1.00 87.28      B    O
ATOM   1630  N   GLN   278     -33.103  -0.271 -43.790  1.00 87.17      B    N
ATOM   1631  CA  GLN   278     -32.162  -1.200 -43.173  1.00 88.06      B    C
ATOM   1632  CB  GLN   278     -31.904  -0.802 -41.716  1.00 89.74      B    C
ATOM   1633  CG  GLN   278     -31.033   0.439 -41.567  1.00 92.15      B    C
ATOM   1634  CD  GLN   278     -30.362   0.529 -40.207  1.00 93.65      B    C
ATOM   1635  OE1 GLN   278     -29.199   0.927 -40.102  1.00 93.33      B    O
ATOM   1636  NE2 GLN   278     -31.092   0.161 -39.158  1.00 93.86      B    N
ATOM   1637  C   GLN   278     -32.653  -2.642 -43.247  1.00 87.50      B    C
ATOM   1638  O   GLN   278     -33.829  -2.897 -43.517  1.00 86.93      B    O
ATOM   1639  N   PRO   279     -31.747  -3.606 -43.013  1.00 87.19      B    N
ATOM   1640  CD  PRO   279     -30.371  -3.404 -42.522  1.00 87.00      B    C
ATOM   1641  CA  PRO   279     -32.081  -5.029 -43.144  1.00 86.05      B    C
ATOM   1642  CB  PRO   279     -30.748  -5.735 -42.902  1.00 86.93      B    C
ATOM   1643  CG  PRO   279     -29.961  -4.772 -42.064  1.00 86.83      B    C
ATOM   1644  C   PRO   279     -33.141  -5.447 -42.134  1.00 84.78      B    C
ATOM   1645  O   PRO   279     -32.885  -5.457 -40.927  1.00 84.29      B    O
ATOM   1646  N   VAL   280     -34.328  -5.791 -42.629  1.00 82.85      B    N
ATOM   1647  CA  VAL   280     -35.447  -6.087 -41.744  1.00 81.21      B    C
ATOM   1648  CB  VAL   280     -36.705  -6.529 -42.531  1.00 81.67      B    C
ATOM   1649  CG1 VAL   280     -37.219  -5.370 -43.376  1.00 82.27      B    C
ATOM   1650  CG2 VAL   280     -36.384  -7.730 -43.407  1.00 82.13      B    C
ATOM   1651  C   VAL   280     -35.077  -7.170 -40.739  1.00 78.95      B    C
ATOM   1652  O   VAL   280     -34.685  -8.280 -41.109  1.00 79.20      B    O
ATOM   1653  N   GLY   281     -35.190  -6.817 -39.463  1.00 75.44      B    N
ATOM   1654  CA  GLY   281     -34.881  -7.733 -38.382  1.00 70.08      B    C
ATOM   1655  C   GLY   281     -35.525  -7.216 -37.112  1.00 65.88      B    C
ATOM   1656  O   GLY   281     -36.125  -6.140 -37.118  1.00 65.69      B    O
ATOM   1657  N   PRO   282     -35.426  -7.955 -36.000  1.00 61.85      B    N
ATOM   1658  CD  PRO   282     -34.668  -9.198 -35.779  1.00 60.16      B    C
ATOM   1659  CA  PRO   282     -36.086  -7.478 -34.782  1.00 58.35      B    C
ATOM   1660  CB  PRO   282     -35.892  -8.629 -33.797  1.00 58.52      B    C
ATOM   1661  CG  PRO   282     -34.665  -9.334 -34.282  1.00 59.82      B    C
ATOM   1662  C   PRO   282     -35.450  -6.182 -34.288  1.00 54.89      B    C
ATOM   1663  O   PRO   282     -34.226  -6.045 -34.290  1.00 53.58      B    O
ATOM   1664  N   LEU   283     -36.271  -5.223 -33.875  1.00 51.11      B    N
ATOM   1665  CA  LEU   283     -35.724  -4.084 -33.152  1.00 49.71      B    C
ATOM   1666  CB  LEU   283     -35.573  -2.863 -34.070  1.00 51.30      B    C
ATOM   1667  CG  LEU   283     -36.798  -2.124 -34.592  1.00 53.34      B    C
ATOM   1668  CD1 LEU   283     -36.331  -1.003 -35.513  1.00 55.23      B    C
ATOM   1669  CD2 LEU   283     -37.712  -3.082 -35.342  1.00 55.78      B    C
ATOM   1670  C   LEU   283     -36.509  -3.712 -31.904  1.00 46.72      B    C
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ATOM   1671  O   LEU   283     -37.742  -3.770 -31.872  1.00 44.82      B    O
ATOM   1672  N   VAL   284     -35.756  -3.356 -30.870  1.00 43.49      B    N
ATOM   1673  CA  VAL   284     -36.301  -2.949 -29.589  1.00 39.58      B    C
ATOM   1674  CB  VAL   284     -35.610  -3.713 -28.433  1.00 40.26      B    C
ATOM   1675  CG1 VAL   284     -36.194  -3.289 -27.093  1.00 37.10      B    C
ATOM   1676  CG2 VAL   284     -35.765  -5.210 -28.634  1.00 36.99      B    C
ATOM   1677  C   VAL   284     -36.040  -1.454 -29.427  1.00 38.56      B    C
ATOM   1678  O   VAL   284     -34.955  -0.964 -29.752  1.00 36.89      B    O
ATOM   1679  N   VAL   285     -37.041  -0.731 -28.935  1.00 35.58      B    N
ATOM   1680  CA  VAL   285     -36.884   0.687 -28.646  1.00 32.71      B    C
ATOM   1681  CB  VAL   285     -37.877   1.540 -29.464  1.00 32.36      B    C
ATOM   1682  CG1 VAL   285     -37.805   2.988 -29.019  1.00 32.21      B    C
ATOM   1683  CG2 VAL   285     -37.555   1.436 -30.951  1.00 32.10      B    C
ATOM   1684  C   VAL   285     -37.113   0.942 -27.161  1.00 31.36      B    C
ATOM   1685  O   VAL   285     -38.186   0.664 -26.629  1.00 29.48      B    O
ATOM   1686  N   LEU   286     -36.093   1.471 -26.497  1.00 31.80      B    N
ATOM   1687  CA  LEU   286     -36.168   1.762 -25.074  1.00 30.07      B    C
ATOM   1688  CB  LEU   286     -34.864   1.331 -24.395  1.00 29.18      B    C
ATOM   1689  CG  LEU   286     -34.687   1.718 -22.920  1.00 30.76      B    C
ATOM   1690  CD1 LEU   286     -35.823   1.180 -22.088  1.00 28.26      B    C
ATOM   1691  CD2 LEU   286     -33.365   1.174 -22.422  1.00 30.08      B    C
ATOM   1692  C   LEU   286     -36.430   3.252 -24.842  1.00 31.06      B    C
ATOM   1693  O   LEU   286     -35.642   4.106 -25.265  1.00 30.24      B    O
ATOM   1694  N   LEU   287     -37.546   3.545 -24.174  1.00 32.05      B    N
ATOM   1695  CA  LEU   287     -37.976   4.911 -23.859  1.00 33.54      B    C
ATOM   1696  CB  LEU   287     -39.387   5.146 -24.398  1.00 35.72      B    C
ATOM   1697  CG  LEU   287     -39.574   5.223 -25.911  1.00 39.35      B    C
ATOM   1698  CD1 LEU   287     -41.043   5.030 -26.265  1.00 39.79      B    C
ATOM   1699  CD2 LEU   287     -39.074   6.571 -26.409  1.00 40.77      B    C
ATOM   1700  C   LEU   287     -37.980   5.171 -22.345  1.00 33.23      B    C
ATOM   1701  O   LEU   287     -39.026   5.134 -21.697  1.00 34.79      B    O
ATOM   1702  N   PRO   288     -36.811   5.445 -21.766  1.00 32.54      B    N
ATOM   1703  CD  PRO   288     -35.532   5.725 -22.440  1.00 31.44      B    C
ATOM   1704  CA  PRO   288     -36.699   5.567 -20.310  1.00 32.08      B    C
ATOM   1705  CB  PRO   288     -35.239   5.233 -20.048  1.00 31.66      B    C
ATOM   1706  CG  PRO   288     -34.536   5.750 -21.298  1.00 32.64      B    C
ATOM   1707  C   PRO   288     -37.060   6.968 -19.835  1.00 31.22      B    C
ATOM   1708  O   PRO   288     -36.271   7.622 -19.162  1.00 31.60      B    O
ATOM   1709  N   LEU   289     -38.247   7.431 -20.203  1.00 30.48      B    N
ATOM   1710  CA  LEU   289     -38.643   8.804 -19.929  1.00 29.51      B    C
ATOM   1711  CB  LEU   289     -38.173   9.725 -21.062  1.00 28.77      B    C
ATOM   1712  CG  LEU   289     -38.586   9.309 -22.485  1.00 30.49      B    C
ATOM   1713  CD1 LEU   289     -40.055   9.665 -22.733  1.00 28.81      B    C
ATOM   1714  CD2 LEU   289     -37.695  10.011 -23.505  1.00 27.89      B    C
ATOM   1715  C   LEU   289     -40.151   8.842 -19.808  1.00 28.98      B    C
ATOM   1716  O   LEU   289     -40.824   7.888 -20.185  1.00 30.19      B    O
ATOM   1717  N   ALA   290     -40.685   9.933 -19.274  1.00 27.61      B    N
ATOM   1718  CA  ALA   290     -42.134  10.075 -19.168  1.00 26.79      B    C
ATOM   1719  CB  ALA   290     -42.656   9.340 -17.925  1.00 25.41      B    C
ATOM   1720  C   ALA   290     -42.546  11.535 -19.118  1.00 26.19      B    C
ATOM   1721  O   ALA   290     -41.813  12.384 -18.613  1.00 25.46      B    O
ATOM   1722  N   GLY   291     -43.725  11.809 -19.665  1.00 25.85      B    N
ATOM   1723  CA  GLY   291     -44.355  13.105 -19.521  1.00 24.71      B    C
ATOM   1724  C   GLY   291     -45.814  12.869 -19.196  1.00 25.09      B    C
ATOM   1725  O   GLY   291     -46.195  11.747 -18.858  1.00 25.42      B    O
ATOM   1726  N   GLY   292     -46.632  13.912 -19.293  1.00 25.44      B    N
ATOM   1727  CA  GLY   292     -48.053  13.746 -19.062  1.00 25.43      B    C
ATOM   1728  C   GLY   292     -48.682  12.967 -20.201  1.00 29.85      B    C
ATOM   1729  O   GLY   292     -48.090  12.849 -21.281  1.00 28.22      B    O
ATOM   1730  N   TYR   293     -49.877  12.425 -19.967  1.00 30.01      B    N
ATOM   1731  CA  TYR   293     -50.562  11.671 -20.999  1.00 30.44      B    C
ATOM   1732  CB  TYR   293     -51.984  11.317 -20.549  1.00 34.81      B    C
ATOM   1733  CG  TYR   293     -52.862  10.849 -21.689  1.00 36.25      B    C
ATOM   1734  CD1 TYR   293     -52.816   9.534 -22.131  1.00 39.72      B    C
ATOM   1735  CE1 TYR   293     -53.555   9.122 -23.230  1.00 42.49      B    C
ATOM   1736  CD2 TYR   293     -53.679  11.744 -22.372  1.00 37.69      B    C
ATOM   1737  CE2 TYR   293     -54.418  11.347 -23.467  1.00 40.77      B    C
ATOM   1738  CZ  TYR   293     -54.351  10.036 -23.895  1.00 42.73      B    C
ATOM   1739  OH  TYR   293     -55.069   9.645 -25.001  1.00 46.40      B    O
ATOM   1740  C   TYR   293     -50.616  12.501 -22.277  1.00 30.43      B    C
ATOM   1741  O   TYR   293     -51.099  13.633 -22.268  1.00 28.65      B    O
ATOM   1742  N   SER   294     -50.117  11.936 -23.373  1.00 29.63      B    N
ATOM   1743  CA  SER   294     -50.139  12.616 -24.663  1.00 30.31      B    C
ATOM   1744  CB  SER   294     -48.714  13.001 -25.067  1.00 30.52      B    C
ATOM   1745  OG  SER   294     -48.628  13.246 -26.461  1.00 32.50      B    O
ATOM   1746  C   SER   294     -50.766  11.740 -25.753  1.00 31.59      B    C
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ATOM   1747  O   SER   294     -50.261  10.657 -26.070  1.00 33.33      B    O
ATOM   1748  N   ARG   295     -51.863  12.213 -26.328  1.00 32.46      B    N
ATOM   1749  CA  ARG   295     -52.540  11.471 -27.382  1.00 34.59      B    C
ATOM   1750  CB  ARG   295     -53.791  12.231 -27.839  1.00 36.79      B    C
ATOM   1751  CG  ARG   295     -54.144  11.990 -29.293  1.00 42.69      B    C
ATOM   1752  CD  ARG   295     -55.529  11.403 -29.477  1.00 43.11      B    C
ATOM   1753  NE  ARG   295     -56.529  12.421 -29.789  1.00 44.13      B    N
ATOM   1754  CZ  ARG   295     -57.453  12.301 -30.741  1.00 43.05      B    C
ATOM   1755  NH1 ARG   295     -57.506  11.207 -31.488  1.00 40.61      B    N
ATOM   1756  NH2 ARG   295     -58.340  13.269 -30.932  1.00 41.43      B    N
ATOM   1757  C   ARG   295     -51.620  11.207 -28.580  1.00 33.96      B    C
ATOM   1758  O   ARG   295     -51.573  10.084 -29.097  1.00 34.38      B    O
ATOM   1759  N   VAL   296     -50.878  12.225 -29.012  1.00 31.60      B    N
ATOM   1760  CA  VAL   296     -50.047  12.080 -30.200  1.00 30.10      B    C
ATOM   1761  CB  VAL   296     -49.564  13.476 -30.748  1.00 29.55      B    C
ATOM   1762  CG1 VAL   296     -48.665  14.165 -29.744  1.00 26.60      B    C
ATOM   1763  CG2 VAL   296     -48.836  13.296 -32.081  1.00 27.87      B    C
ATOM   1764  C   VAL   296     -48.845  11.173 -29.929  1.00 31.23      B    C
ATOM   1765  O   VAL   296     -48.451  10.380 -30.788  1.00 32.00      B    O
ATOM   1766  N   LEU   297     -48.268  11.259 -28.734  1.00 29.72      B    N
ATOM   1767  CA  LEU   297     -47.151  10.381 -28.405  1.00 29.56      B    C
ATOM   1768  CB  LEU   297     -46.496  10.813 -27.092  1.00 30.51      B    C
ATOM   1769  CG  LEU   297     -45.183  10.098 -26.782  1.00 30.69      B    C
ATOM   1770  CD1 LEU   297     -44.244  10.249 -27.966  1.00 30.90      B    C
ATOM   1771  CD2 LEU   297     -44.554  10.680 -25.526  1.00 30.10      B    C
ATOM   1772  C   LEU   297     -47.602   8.919 -28.301  1.00 30.80      B    C
ATOM   1773  O   LEU   297     -46.916   8.015 -28.786  1.00 30.98      B    O
ATOM   1774  N   ASN   298     -48.751   8.682 -27.673  1.00 28.12      B    N
ATOM   1775  CA  ASN   298     -49.312   7.333 -27.628  1.00 28.96      B    C
ATOM   1776  CB  ASN   298     -50.579   7.291 -26.758  1.00 25.34      B    C
ATOM   1777  CG  ASN   298     -50.267   7.390 -25.270  1.00 30.20      B    C
ATOM   1778  OD1 ASN   298     -49.120   7.635 -24.877  1.00 29.99      B    O
ATOM   1779  ND2 ASN   298     -51.286   7.203 -24.435  1.00 28.93      B    N
ATOM   1780  C   ASN   298     -49.631   6.815 -29.032  1.00 30.19      B    C
ATOM   1781  O   ASN   298     -49.391   5.644 -29.323  1.00 30.64      B    O
ATOM   1782  N   ALA   299     -50.155   7.684 -29.899  1.00 29.73      B    N
ATOM   1783  CA  ALA   299     -50.489   7.284 -31.271  1.00 31.32      B    C
ATOM   1784  CB  ALA   299     -51.300   8.386 -31.974  1.00 26.66      B    C
ATOM   1785  C   ALA   299     -49.244   6.957 -32.094  1.00 32.43      B    C
ATOM   1786  O   ALA   299     -49.247   6.012 -32.883  1.00 34.42      B    O
ATOM   1787  N   ALA   300     -48.177   7.728 -31.913  1.00 32.41      B    N
ATOM   1788  CA  ALA   300     -46.930   7.441 -32.615  1.00 34.19      B    C
ATOM   1789  CB  ALA   300     -45.915   8.553 -32.362  1.00 32.82      B    C
ATOM   1790  C   ALA   300     -46.362   6.091 -32.161  1.00 35.95      B    C
ATOM   1791  O   ALA   300     -45.826   5.326 -32.968  1.00 35.23      B    O
ATOM   1792  N   CYS   301     -46.483   5.798 -30.870  1.00 35.94      B    N
ATOM   1793  CA  CYS   301     -45.982   4.537 -30.341  1.00 38.41      B    C
ATOM   1794  CB  CYS   301     -46.000   4.550 -28.809  1.00 35.59      B    C
ATOM   1795  SG  CYS   301     -44.722   5.609 -28.072  1.00 39.73      B    S
ATOM   1796  C   CYS   301     -46.810   3.364 -30.857  1.00 39.27      B    C
ATOM   1797  O   CYS   301     -46.260   2.319 -31.207  1.00 38.08      B    O
ATOM   1798  N   GLN   302     -48.128   3.535 -30.913  1.00 40.20      B    N
ATOM   1799  CA  GLN   302     -48.982   2.474 -31.431  1.00 43.44      B    C
ATOM   1800  CB  GLN   302     -50.454   2.857 -31.318  1.00 44.90      B    C
ATOM   1801  CG  GLN   302     -51.371   1.816 -31.935  1.00 49.59      B    C
ATOM   1802  CD  GLN   302     -52.832   2.201 -31.856  1.00 53.42      B    C
ATOM   1803  OE1 GLN   302     -53.351   2.884 -32.741  1.00 56.88      B    O
ATOM   1804  NE2 GLN   302     -53.509   1.760 -30.798  1.00 52.21      B    N
ATOM   1805  C   GLN   302     -48.649   2.178 -32.892  1.00 43.80      B    C
ATOM   1806  O   GLN   302     -48.551   1.021 -33.298  1.00 44.02      B    O
ATOM   1807  N   ARG   303     -48.467   3.230 -33.677  1.00 43.42      B    N
ATOM   1808  CA  ARG   303     -48.146   3.068 -35.083  1.00 45.57      B    C
ATOM   1809  CB  ARG   303     -48.065   4.440 -35.747  1.00 49.32      B    C
ATOM   1810  CG  ARG   303     -48.758   4.523 -37.097  1.00 58.51      B    C
ATOM   1811  CD  ARG   303     -47.880   3.939 -38.194  1.00 66.09      B    C
ATOM   1812  NE  ARG   303     -48.459   4.098 -39.527  1.00 72.79      B    N
ATOM   1813  CZ  ARG   303     -47.840   3.755 -40.655  1.00 75.84      B    C
ATOM   1814  NH1 ARG   303     -48.439   3.933 -41.828  1.00 78.15      B    N
ATOM   1815  NH2 ARG   303     -46.617   3.236 -40.611  1.00 75.76      B    N
ATOM   1816  C   ARG   303     -46.828   2.304 -35.266  1.00 45.17      B    C
ATOM   1817  O   ARG   303     -46.701   1.481 -36.169  1.00 45.58      B    O
ATOM   1818  N   LEU   304     -45.850   2.564 -34.405  1.00 44.81      B    N
ATOM   1819  CA  LEU   304     -44.571   1.860 -34.489  1.00 44.87      B    C
ATOM   1820  CB  LEU   304     -43.534   2.512 -33.572  1.00 44.25      B    C
ATOM   1821  CG  LEU   304     -42.401   3.336 -34.182  1.00 45.66      B    C
ATOM   1822  CD1 LEU   304     -41.558   3.899 -33.052  1.00 46.67      B    C
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ATOM   1823  CD2 LEU   304     -41.537   2.485 -35.105  1.00 44.90      B    C
ATOM   1824  C   LEU   304     -44.741   0.398 -34.086  1.00 44.94      B    C
ATOM   1825  O   LEU   304     -44.161  -0.495 -34.698  1.00 45.02      B    O
ATOM   1826  N   ALA   305     -45.536   0.163 -33.047  1.00 45.15      B    N
ATOM   1827  CA  ALA   305     -45.766  -1.186 -32.548  1.00 46.08      B    C
ATOM   1828  CB  ALA   305     -46.657  -1.144 -31.310  1.00 42.15      B    C
ATOM   1829  C   ALA   305     -46.406  -2.054 -33.629  1.00 47.90      B    C
ATOM   1830  O   ALA   305     -46.089  -3.236 -33.754  1.00 48.31      B    O
ATOM   1831  N   ARG   306     -47.300  -1.461 -34.414  1.00 49.18      B    N
ATOM   1832  CA  ARG   306     -47.972  -2.189 -35.482  1.00 51.26      B    C
ATOM   1833  CB  ARG   306     -49.248  -1.449 -35.895  1.00 53.10      B    C
ATOM   1834  CG  ARG   306     -50.258  -1.368 -34.759  1.00 59.04      B    C
ATOM   1835  CD  ARG   306     -51.626  -0.912 -35.228  1.00 63.57      B    C
ATOM   1836  NE  ARG   306     -52.625  -1.044 -34.168  1.00 68.39      B    N
ATOM   1837  CZ  ARG   306     -53.925  -0.806 -34.332  1.00 71.24      B    C
ATOM   1838  NH1 ARG   306     -54.765  -0.952 -33.313  1.00 71.47      B    N
ATOM   1839  NH2 ARG   306     -54.385  -0.421 -35.518  1.00 72.89      B    N
ATOM   1840  C   ARG   306     -47.070  -2.422 -36.691  1.00 50.78      B    C
ATOM   1841  O   ARG   306     -47.418  -3.184 -37.590  1.00 51.65      B    O
ATOM   1842  N   ALA   307     -45.910  -1.773 -36.706  1.00 48.97      B    N
ATOM   1843  CA  ALA   307     -44.895  -2.049 -37.719  1.00 47.77      B    C
ATOM   1844  CB  ALA   307     -44.162  -0.772 -38.088  1.00 47.29      B    C
ATOM   1845  C   ALA   307     -43.897  -3.093 -37.221  1.00 48.22      B    C
ATOM   1846  O   ALA   307     -42.846  -3.301 -37.833  1.00 48.90      B    O
ATOM   1847  N   GLY   308     -44.218  -3.734 -36.100  1.00 47.59      B    N
ATOM   1848  CA  GLY   308     -43.385  -4.819 -35.604  1.00 47.86      B    C
ATOM   1849  C   GLY   308     -42.267  -4.428 -34.648  1.00 47.93      B    C
ATOM   1850  O   GLY   308     -41.354  -5.219 -34.408  1.00 50.24      B    O
ATOM   1851  N   VAL   309     -42.324  -3.218 -34.099  1.00 45.49      B    N
ATOM   1852  CA  VAL   309     -41.312  -2.776 -33.145  1.00 41.95      B    C
ATOM   1853  CB  VAL   309     -41.060  -1.255 -33.264  1.00 42.45      B    C
ATOM   1854  CG1 VAL   309     -40.007  -0.818 -32.256  1.00 41.14      B    C
ATOM   1855  CG2 VAL   309     -40.616  -0.912 -34.674  1.00 42.26      B    C
ATOM   1856  C   VAL   309     -41.739  -3.092 -31.714  1.00 40.15      B    C
ATOM   1857  O   VAL   309     -42.892  -2.892 -31.343  1.00 40.60      B    O
ATOM   1858  N   VAL   310     -40.804  -3.594 -30.917  1.00 38.32      B    N
ATOM   1859  CA  VAL   310     -41.023  -3.780 -29.488  1.00 35.74      B    C
ATOM   1860  CB  VAL   310     -40.163  -4.936 -28.942  1.00 36.40      B    C
ATOM   1861  CG1 VAL   310     -40.404  -5.099 -27.449  1.00 35.15      B    C
ATOM   1862  CG2 VAL   310     -40.483  -6.226 -29.689  1.00 35.82      B    C
ATOM   1863  C   VAL   310     -40.625  -2.509 -28.743  1.00 35.88      B    C
ATOM   1864  O   VAL   310     -39.440  -2.173 -28.665  1.00 35.37      B    O
ATOM   1865  N   LEU   311     -41.608  -1.798 -28.199  1.00 34.34      B    N
ATOM   1866  CA  LEU   311     -41.322  -0.609 -27.407  1.00 34.02      B    C
ATOM   1867  CB  LEU   311     -42.283   0.526 -27.768  1.00 35.30      B    C
ATOM   1868  CG  LEU   311     -42.024   1.154 -29.138  1.00 41.31      B    C
ATOM   1869  CD1 LEU   311     -42.701   0.315 -30.213  1.00 42.98      B    C
ATOM   1870  CD2 LEU   311     -42.552   2.580 -29.168  1.00 41.58      B    C
ATOM   1871  C   LEU   311     -41.410  -0.898 -25.915  1.00 33.33      B    C
ATOM   1872  O   LEU   311     -42.376  -1.502 -25.439  1.00 32.23      B    O
ATOM   1873  N   VAL   312     -40.394  -0.454 -25.184  1.00 31.89      B    N
ATOM   1874  CA  VAL   312     -40.347  -0.631 -23.739  1.00 31.45      B    C
ATOM   1875  CB  VAL   312     -39.169  -1.529 -23.335  1.00 30.23      B    C
ATOM   1876  CG1 VAL   312     -39.200  -1.774 -21.836  1.00 29.35      B    C
ATOM   1877  CG2 VAL   312     -39.225  -2.842 -24.109  1.00 29.71      B    C
ATOM   1878  C   VAL   312     -40.165   0.729 -23.079  1.00 32.28      B    C
ATOM   1879  O   VAL   312     -39.319   1.521 -23.507  1.00 30.28      B    O
ATOM   1880  N   THR   313     -40.950   1.003 -22.041  1.00 31.04      B    N
ATOM   1881  CA  THR   313     -40.906   2.317 -21.411  1.00 32.69      B    C
ATOM   1882  CB  THR   313     -42.075   3.223 -21.908  1.00 34.74      B    C
ATOM   1883  OG1 THR   313     -41.854   4.571 -21.471  1.00 40.86      B    O
ATOM   1884  CG2 THR   313     -43.405   2.750 -21.339  1.00 34.22      B    C
ATOM   1885  C   THR   313     -40.971   2.221 -19.890  1.00 32.73      B    C
ATOM   1886  O   THR   313     -41.479   1.243 -19.341  1.00 31.28      B    O
ATOM   1887  N   ALA   314     -40.456   3.246 -19.216  1.00 31.17      B    N
ATOM   1888  CA  ALA   314     -40.574   3.344 -17.767  1.00 29.71      B    C
ATOM   1889  CB  ALA   314     -39.636   4.439 -17.235  1.00 27.09      B    C
ATOM   1890  C   ALA   314     -42.017   3.664 -17.383  1.00 30.01      B    C
ATOM   1891  O   ALA   314     -42.696   4.430 -18.071  1.00 31.46      B    O
ATOM   1892  N   ALA   315     -42.480   3.087 -16.278  1.00 29.03      B    N
ATOM   1893  CA  ALA   315     -43.813   3.390 -15.767  1.00 28.17      B    C
ATOM   1894  CB  ALA   315     -44.191   2.398 -14.663  1.00 28.01      B    C
ATOM   1895  C   ALA   315     -43.904   4.816 -15.227  1.00 27.59      B    C
ATOM   1896  O   ALA   315     -44.992   5.405 -15.194  1.00 26.65      B    O
ATOM   1897  N   GLY   316     -42.766   5.361 -14.795  1.00 26.83      B    N
ATOM   1898  CA  GLY   316     -42.761   6.652 -14.123  1.00 27.76      B    C
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ATOM	1899	C	GLY	316	-42.447	6.543	-12.635	1.00	29.58	B	C
ATOM	1900	O	GLY	316	-42.688	5.505	-12.019	1.00	29.69	B	O
ATOM	1901	N	ASN	317	-41.924	7.621	-12.053	1.00	28.12	B	N
ATOM	1902	CA	ASN	317	-41.375	7.586	-10.702	1.00	26.22	B	C
ATOM	1903	CB	ASN	317	-39.962	8.172	-10.705	1.00	25.39	B	C
ATOM	1904	CG	ASN	317	-38.976	7.290	-11.441	1.00	27.85	B	C
ATOM	1905	OD1	ASN	317	-39.265	6.123	-11.712	1.00	27.83	B	O
ATOM	1906	ND2	ASN	317	-37.807	7.839	-11.772	1.00	24.72	B	N
ATOM	1907	C	ASN	317	-42.214	8.332	-9.675	1.00	27.33	B	C
ATOM	1908	O	ASN	317	-41.697	8.759	-8.637	1.00	26.61	B	O
ATOM	1909	N	PHE	318	-43.504	8.494	-9.948	1.00	26.04	B	N
ATOM	1910	CA	PHE	318	-44.293	9.446	-9.180	1.00	27.75	B	C
ATOM	1911	CB	PHE	318	-45.017	10.392	-10.146	1.00	28.25	B	C
ATOM	1912	CG	PHE	318	-44.086	11.087	-11.107	1.00	29.82	B	C
ATOM	1913	CD1	PHE	318	-43.300	12.146	-10.684	1.00	29.15	B	C
ATOM	1914	CD2	PHE	318	-43.966	10.653	-12.419	1.00	26.83	B	C
ATOM	1915	CE1	PHE	318	-42.405	12.760	-11.553	1.00	29.49	B	C
ATOM	1916	CE2	PHE	318	-43.076	11.261	-13.288	1.00	29.07	B	C
ATOM	1917	CZ	PHE	318	-42.293	12.316	-12.855	1.00	28.36	B	C
ATOM	1918	C	PHE	318	-45.284	8.806	-8.208	1.00	28.02	B	C
ATOM	1919	O	PHE	318	-46.189	9.477	-7.708	1.00	25.42	B	O
ATOM	1920	N	ARG	319	-45.102	7.514	-7.945	1.00	28.99	B	N
ATOM	1921	CA	ARG	319	-46.019	6.760	-7.097	1.00	31.68	B	C
ATOM	1922	CB	ARG	319	-45.726	7.047	-5.624	1.00	35.03	B	C
ATOM	1923	CG	ARG	319	-46.361	6.058	-4.674	1.00	40.29	B	C
ATOM	1924	CD	ARG	319	-45.680	6.070	-3.317	1.00	43.31	B	C
ATOM	1925	NE	ARG	319	-46.115	4.937	-2.505	1.00	50.86	B	N
ATOM	1926	CZ	ARG	319	-45.568	4.592	-1.340	1.00	55.39	B	C
ATOM	1927	NH1	ARG	319	-44.555	5.299	-0.845	1.00	56.32	B	N
ATOM	1928	NH2	ARG	319	-46.034	3.537	-0.673	1.00	54.10	B	N
ATOM	1929	C	ARG	319	-47.462	7.131	-7.428	1.00	30.53	B	C
ATOM	1930	O	ARG	319	-48.235	7.551	-6.566	1.00	30.48	B	O
ATOM	1931	N	ASP	320	-47.809	6.969	-8.696	1.00	30.77	B	N
ATOM	1932	CA	ASP	320	-49.078	7.444	-9.226	1.00	31.58	B	C
ATOM	1933	CB	ASP	320	-48.857	8.803	-9.906	1.00	33.04	B	C
ATOM	1934	CG	ASP	320	-50.140	9.599	-10.080	1.00	35.04	B	C
ATOM	1935	OD1	ASP	320	-51.190	9.185	-9.540	1.00	37.48	B	O
ATOM	1936	OD2	ASP	320	-50.095	10.649	-10.766	1.00	36.23	B	O
ATOM	1937	C	ASP	320	-49.594	6.412	-10.240	1.00	31.73	B	C
ATOM	1938	O	ASP	320	-48.915	5.423	-10.546	1.00	29.24	B	O
ATOM	1939	N	ASP	321	-50.795	6.649	-10.751	1.00	31.26	B	N
ATOM	1940	CA	ASP	321	-51.382	5.803	-11.782	1.00	32.35	B	C
ATOM	1941	CB	ASP	321	-52.880	6.109	-11.894	1.00	35.85	B	C
ATOM	1942	CG	ASP	321	-53.610	5.160	-12.831	1.00	40.53	B	C
ATOM	1943	OD1	ASP	321	-52.947	4.460	-13.623	1.00	41.07	B	O
ATOM	1944	OD2	ASP	321	-54.859	5.116	-12.772	1.00	46.57	B	O
ATOM	1945	C	ASP	321	-50.691	6.067	-13.123	1.00	31.57	B	C
ATOM	1946	O	ASP	321	-50.791	7.163	-13.671	1.00	30.24	B	O
ATOM	1947	N	ALA	322	-50.007	5.052	-13.648	1.00	30.47	B	N
ATOM	1948	CA	ALA	322	-49.207	5.181	-14.862	1.00	30.58	B	C
ATOM	1949	CB	ALA	322	-48.459	3.876	-15.132	1.00	29.62	B	C
ATOM	1950	C	ALA	322	-50.035	5.562	-16.085	1.00	32.45	B	C
ATOM	1951	O	ALA	322	-49.496	5.993	-17.108	1.00	32.37	B	O
ATOM	1952	N	CYS	323	-51.347	5.410	-15.989	1.00	33.17	B	N
ATOM	1953	CA	CYS	323	-52.199	5.763	-17.114	1.00	36.70	B	C
ATOM	1954	C	CYS	323	-52.321	7.285	-17.294	1.00	34.79	B	C
ATOM	1955	O	CYS	323	-52.950	7.757	-18.244	1.00	35.34	B	O
ATOM	1956	CB	CYS	323	-53.595	5.156	-16.942	1.00	41.21	B	C
ATOM	1957	SG	CYS	323	-53.747	3.326	-16.881	1.00	51.68	B	S
ATOM	1958	N	LEU	324	-51.723	8.053	-16.388	1.00	32.69	B	N
ATOM	1959	CA	LEU	324	-51.751	9.516	-16.496	1.00	31.24	B	C
ATOM	1960	CB	LEU	324	-51.868	10.146	-15.108	1.00	31.16	B	C
ATOM	1961	CG	LEU	324	-53.119	9.756	-14.313	1.00	36.04	B	C
ATOM	1962	CD1	LEU	324	-53.026	10.321	-12.893	1.00	34.08	B	C
ATOM	1963	CD2	LEU	324	-54.363	10.281	-15.024	1.00	33.82	B	C
ATOM	1964	C	LEU	324	-50.497	10.047	-17.192	1.00	29.73	B	C
ATOM	1965	O	LEU	324	-50.338	11.258	-17.366	1.00	28.10	B	O
ATOM	1966	N	TYR	325	-49.619	9.126	-17.586	1.00	28.37	B	N
ATOM	1967	CA	TYR	325	-48.819	9.457	-18.161	1.00	27.58	B	C
ATOM	1968	CB	TYR	325	-47.211	8.953	-17.225	1.00	24.47	B	C
ATOM	1969	CG	TYR	325	-47.331	9.551	-15.838	1.00	26.90	B	C
ATOM	1970	CD1	TYR	325	-46.692	10.742	-15.519	1.00	25.31	B	C
ATOM	1971	CE1	TYR	325	-46.917	11.372	-14.301	1.00	27.10	B	C
ATOM	1972	CD2	TYR	325	-48.187	8.992	-14.890	1.00	24.93	B	C
ATOM	1973	CE2	TYR	325	-48.413	9.614	-13.672	1.00	25.78	B	C
ATOM	1974	CZ	TYR	325	-47.779	10.807	-13.389	1.00	26.84	B	C

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ATOM   1975  OH  TYR   325     -48.035  11.452 -12.203  1.00 29.69      B    O
ATOM   1976  C   TYR   325     -48.167   8.829 -19.550  1.00 28.62      B    C
ATOM   1977  O   TYR   325     -48.836   7.852 -19.872  1.00 28.99      B    O
ATOM   1978  N   SER   326     -47.293   9.401 -20.372  1.00 28.16      B    N
ATOM   1979  CA  SER   326     -46.932   8.797 -21.649  1.00 27.92      B    C
ATOM   1980  CB  SER   326     -47.539   9.583 -22.813  1.00 27.53      B    C
ATOM   1981  OG  SER   326     -48.955   9.520 -22.795  1.00 29.55      B    O
ATOM   1982  C   SER   326     -45.417   8.790 -21.786  1.00 29.65      B    C
ATOM   1983  O   SER   326     -44.732   9.679 -21.264  1.00 28.75      B    O
ATOM   1984  N   PRO   327     -44.872   7.801 -22.514  1.00 30.05      B    N
ATOM   1985  CD  PRO   327     -43.446   7.791 -22.891  1.00 29.85      B    C
ATOM   1986  CA  PRO   327     -45.635   6.756 -23.212  1.00 30.77      B    C
ATOM   1987  CB  PRO   327     -44.677   6.278 -24.297  1.00 30.62      B    C
ATOM   1988  CG  PRO   327     -43.319   6.561 -23.736  1.00 32.87      B    C
ATOM   1989  C   PRO   327     -46.133   5.602 -22.333  1.00 32.88      B    C
ATOM   1990  O   PRO   327     -46.680   4.615 -22.844  1.00 34.26      B    O
ATOM   1991  N   ALA   328     -45.954   5.723 -21.020  1.00 30.65      B    N
ATOM   1992  CA  ALA   328     -46.395   4.682 -20.099  1.00 31.33      B    C
ATOM   1993  CB  ALA   328     -46.348   5.200 -18.650  1.00 29.11      B    C
ATOM   1994  C   ALA   328     -47.805   4.180 -20.427  1.00 31.48      B    C
ATOM   1995  O   ALA   328     -48.063   2.982 -20.381  1.00 30.12      B    O
ATOM   1996  N   SER   329     -48.712   5.095 -20.760  1.00 32.07      B    N
ATOM   1997  CA  SER   329     -50.122   4.743 -20.930  1.00 32.34      B    C
ATOM   1998  CB  SER   329     -51.012   5.962 -20.652  1.00 31.27      B    C
ATOM   1999  OG  SER   329     -50.757   7.013 -21.575  1.00 29.75      B    O
ATOM   2000  C   SER   329     -50.467   4.182 -22.313  1.00 34.16      B    C
ATOM   2001  O   SER   329     -51.615   3.818 -22.560  1.00 35.28      B    O
ATOM   2002  N   ALA   330     -49.494   4.125 -23.218  1.00 35.08      B    N
ATOM   2003  CA  ALA   330     -49.737   3.524 -24.531  1.00 38.27      B    C
ATOM   2004  CB  ALA   330     -48.570   3.812 -25.467  1.00 34.75      B    C
ATOM   2005  C   ALA   330     -49.923   2.014 -24.365  1.00 40.98      B    C
ATOM   2006  O   ALA   330     -49.071   1.325 -23.797  1.00 39.23      B    O
ATOM   2007  N   PRO   331     -51.054   1.479 -24.846  1.00 45.25      B    N
ATOM   2008  CD  PRO   331     -52.211   2.171 -25.439  1.00 46.82      B    C
ATOM   2009  CA  PRO   331     -51.352   0.072 -24.530  1.00 48.31      B    C
ATOM   2010  CB  PRO   331     -52.786  -0.120 -25.039  1.00 48.39      B    C
ATOM   2011  CG  PRO   331     -53.367   1.275 -25.047  1.00 49.16      B    C
ATOM   2012  C   PRO   331     -50.373  -0.922 -25.156  1.00 49.41      B    C
ATOM   2013  O   PRO   331     -50.012  -1.924 -24.532  1.00 51.91      B    O
ATOM   2014  N   GLU   332     -49.933  -0.636 -26.377  1.00 46.64      B    N
ATOM   2015  CA  GLU   332     -49.056  -1.547 -27.097  1.00 46.33      B    C
ATOM   2016  CB  GLU   332     -49.176  -1.311 -28.605  1.00 49.01      B    C
ATOM   2017  CG  GLU   332     -49.292   0.153 -29.001  1.00 57.16      B    C
ATOM   2018  CD  GLU   332     -50.640   0.770 -28.631  1.00 60.17      B    C
ATOM   2019  OE1 GLU   332     -51.647   0.490 -29.323  1.00 59.75      B    O
ATOM   2020  OE2 GLU   332     -50.688   1.538 -27.646  1.00 61.46      B    O
ATOM   2021  C   GLU   332     -47.597  -1.445 -26.665  1.00 44.15      B    C
ATOM   2022  O   GLU   332     -46.767  -2.243 -27.091  1.00 45.37      B    O
ATOM   2023  N   VAL   333     -47.286  -0.470 -25.816  1.00 41.02      B    N
ATOM   2024  CA  VAL   333     -45.942  -0.334 -25.261  1.00 37.77      B    C
ATOM   2025  CB  VAL   333     -45.622   1.142 -24.918  1.00 38.27      B    C
ATOM   2026  CG1 VAL   333     -44.275   1.235 -24.232  1.00 37.40      B    C
ATOM   2027  CG2 VAL   333     -45.625   1.989 -26.188  1.00 35.51      B    C
ATOM   2028  C   VAL   333     -45.821  -1.168 -23.986  1.00 36.92      B    C
ATOM   2029  O   VAL   333     -46.752  -1.229 -23.182  1.00 39.57      B    O
ATOM   2030  N   ILE   334     -44.679  -1.816 -23.800  1.00 33.69      B    N
ATOM   2031  CA  ILE   334     -44.452  -2.578 -22.582  1.00 32.34      B    C
ATOM   2032  CB  ILE   334     -43.411  -3.694 -22.825  1.00 33.09      B    C
ATOM   2033  CG2 ILE   334     -43.133  -4.462 -21.531  1.00 29.80      B    C
ATOM   2034  CG1 ILE   334     -43.944  -4.661 -23.889  1.00 34.39      B    C
ATOM   2035  CD1 ILE   334     -42.924  -5.688 -24.336  1.00 36.56      B    C
ATOM   2036  C   ILE   334     -43.974  -1.629 -21.487  1.00 31.39      B    C
ATOM   2037  O   ILE   334     -42.896  -1.038 -21.581  1.00 31.20      B    O
ATOM   2038  N   THR   335     -44.802  -1.476 -20.459  1.00 29.87      B    N
ATOM   2039  CA  THR   335     -44.595  -0.468 -19.428  1.00 27.70      B    C
ATOM   2040  CB  THR   335     -45.916   0.263 -19.129  1.00 28.65      B    C
ATOM   2041  OG1 THR   335     -46.402   0.865 -20.335  1.00 28.99      B    O
ATOM   2042  CG2 THR   335     -45.717   1.341 -18.064  1.00 28.22      B    C
ATOM   2043  C   THR   335     -44.086  -1.147 -18.162  1.00 28.59      B    C
ATOM   2044  O   THR   335     -44.718  -2.075 -17.658  1.00 26.97      B    O
ATOM   2045  N   VAL   336     -42.945  -0.687 -17.652  1.00 27.73      B    N
ATOM   2046  CA  VAL   336     -42.243  -1.412 -16.599  1.00 27.54      B    C
ATOM   2047  CB  VAL   336     -40.832  -1.821 -17.063  1.00 28.07      B    C
ATOM   2048  CG1 VAL   336     -40.221  -2.801 -16.070  1.00 26.47      B    C
ATOM   2049  CG2 VAL   336     -40.893  -2.421 -18.460  1.00 27.88      B    C
ATOM   2050  C   VAL   336     -42.101  -0.604 -15.310  1.00 28.83      B    C
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ATOM   2051  O   VAL   336     -41.441   0.435 -15.294  1.00 28.91       B    O
ATOM   2052  N   GLY   337     -42.716  -1.092 -14.233  1.00 28.31       B    N
ATOM   2053  CA  GLY   337     -42.482  -0.526 -12.915  1.00 27.90       B    C
ATOM   2054  C   GLY   337     -41.205  -1.068 -12.289  1.00 29.62       B    C
ATOM   2055  O   GLY   337     -40.568  -1.968 -12.846  1.00 29.27       B    O
ATOM   2056  N   ALA   338     -40.825  -0.522 -11.135  1.00 29.78       B    N
ATOM   2057  CA  ALA   338     -39.560  -0.879 -10.490  1.00 32.25       B    C
ATOM   2058  CB  ALA   338     -38.677   0.360 -10.348  1.00 29.13       B    C
ATOM   2059  C   ALA   338     -39.764  -1.526  -9.118  1.00 32.86       B    C
ATOM   2060  O   ALA   338     -40.581  -1.062  -8.317  1.00 32.98       B    O
ATOM   2061  N   THR   339     -39.010  -2.593  -8.861  1.00 33.23       B    N
ATOM   2062  CA  THR   339     -39.001  -3.263  -7.561  1.00 33.80       B    C
ATOM   2063  CB  THR   339     -39.556  -4.709  -7.667  1.00 34.64       B    C
ATOM   2064  OG1 THR   339     -38.991  -5.349  -8.819  1.00 35.54       B    O
ATOM   2065  CG2 THR   339     -41.079  -4.706  -7.774  1.00 32.31       B    C
ATOM   2066  C   THR   339     -37.577  -3.324  -7.006  1.00 34.89       B    C
ATOM   2067  O   THR   339     -36.603  -3.162  -7.749  1.00 34.08       B    O
ATOM   2068  N   ASN   340     -37.456  -3.554  -5.702  1.00 34.66       B    N
ATOM   2069  CA  ASN   340     -36.147  -3.582  -5.069  1.00 37.60       B    C
ATOM   2070  CB  ASN   340     -36.175  -2.780  -3.765  1.00 38.22       B    C
ATOM   2071  CG  ASN   340     -37.163  -3.339  -2.753  1.00 40.64       B    C
ATOM   2072  OD1 ASN   340     -37.492  -4.529  -2.771  1.00 37.96       B    O
ATOM   2073  ND2 ASN   340     -37.639  -2.478  -1.859  1.00 40.07       B    N
ATOM   2074  C   ASN   340     -35.680  -5.010  -4.799  1.00 38.46       B    C
ATOM   2075  O   ASN   340     -36.291  -5.972  -5.262  1.00 38.14       B    O
ATOM   2076  N   ALA   341     -34.593  -5.140  -4.046  1.00 39.59       B    N
ATOM   2077  CA  ALA   341     -33.991  -6.443  -3.783  1.00 42.44       B    C
ATOM   2078  CB  ALA   341     -32.656  -6.258  -3.059  1.00 41.05       B    C
ATOM   2079  C   ALA   341     -34.914  -7.361  -2.971  1.00 43.87       B    C
ATOM   2080  O   ALA   341     -34.759  -8.580  -2.988  1.00 43.82       B    O
ATOM   2081  N   GLN   342     -35.875  -6.778  -2.263  1.00 45.12       B    N
ATOM   2082  CA  GLN   342     -36.859  -7.577  -1.546  1.00 47.53       B    C
ATOM   2083  CB  GLN   342     -37.226  -6.902  -0.222  1.00 49.70       B    C
ATOM   2084  CG  GLN   342     -36.050  -6.727   0.734  1.00 55.38       B    C
ATOM   2085  CD  GLN   342     -35.164  -5.536   0.378  1.00 61.16       B    C
ATOM   2086  OE1 GLN   342     -35.658  -4.444   0.073  1.00 63.32       B    O
ATOM   2087  NE2 GLN   342     -33.848  -5.742   0.415  1.00 61.47       B    N
ATOM   2088  C   GLN   342     -38.118  -7.803  -2.386  1.00 47.92       B    C
ATOM   2089  O   GLN   342     -39.140  -8.270  -1.876  1.00 48.27       B    O
ATOM   2090  N   ASP   343     -38.037  -7.468  -3.673  1.00 47.35       B    N
ATOM   2091  CA  ASP   343     -39.170  -7.602  -4.589  1.00 47.37       B    C
ATOM   2092  CB  ASP   343     -39.621  -9.068  -4.669  1.00 49.86       B    C
ATOM   2093  CG  ASP   343     -38.718  -9.919  -5.560  1.00 52.80       B    C
ATOM   2094  OD1 ASP   343     -38.041  -9.368  -6.457  1.00 52.60       B    O
ATOM   2095  OD2 ASP   343     -38.691 -11.154  -5.366  1.00 56.09       B    O
ATOM   2096  C   ASP   343     -40.371  -6.721  -4.227  1.00 45.38       B    C
ATOM   2097  O   ASP   343     -41.501  -7.023  -4.607  1.00 46.25       B    O
ATOM   2098  N   GLN   344     -40.132  -5.634  -3.498  1.00 42.74       B    N
ATOM   2099  CA  GLN   344     -41.194  -4.674  -3.199  1.00 42.66       B    C
ATOM   2100  CB  GLN   344     -41.142  -4.269  -1.720  1.00 44.37       B    C
ATOM   2101  CG  GLN   344     -41.297  -5.432  -0.745  1.00 46.69       B    C
ATOM   2102  CD  GLN   344     -42.386  -6.418  -1.167  1.00 49.58       B    C
ATOM   2103  OE1 GLN   344     -43.575  -6.081  -1.194  1.00 50.25       B    O
ATOM   2104  NE2 GLN   344     -41.979  -7.644  -1.498  1.00 47.71       B    N
ATOM   2105  C   GLN   344     -41.068  -3.426  -4.081  1.00 40.29       B    C
ATOM   2106  O   GLN   344     -39.986  -3.105  -4.570  1.00 39.64       B    O
ATOM   2107  N   PRO   345     -42.176  -2.703  -4.289  1.00 38.37       B    N
ATOM   2108  CD  PRO   345     -43.521  -2.949  -3.745  1.00 38.04       B    C
ATOM   2109  CA  PRO   345     -42.139  -1.503  -5.136  1.00 37.61       B    C
ATOM   2110  CB  PRO   345     -43.569  -0.966  -5.068  1.00 36.21       B    C
ATOM   2111  CG  PRO   345     -44.400  -2.140  -4.664  1.00 37.92       B    C
ATOM   2112  C   PRO   345     -41.123  -0.490  -4.604  1.00 36.80       B    C
ATOM   2113  O   PRO   345     -41.083  -0.218  -3.406  1.00 36.00       B    O
ATOM   2114  N   VAL   346     -40.304   0.062  -5.493  1.00 34.88       B    N
ATOM   2115  CA  VAL   346     -39.250   0.981  -5.082  1.00 35.68       B    C
ATOM   2116  CB  VAL   346     -38.282   1.265  -6.251  1.00 37.41       B    C
ATOM   2117  CG1 VAL   346     -37.162   2.189  -5.790  1.00 41.37       B    C
ATOM   2118  CG2 VAL   346     -37.701  -0.037  -6.769  1.00 39.72       B    C
ATOM   2119  C   VAL   346     -39.826   2.310  -4.593  1.00 35.58       B    C
ATOM   2120  O   VAL   346     -40.746   2.856  -5.199  1.00 36.23       B    O
ATOM   2121  N   THR   347     -39.292   2.833  -3.494  1.00 35.01       B    N
ATOM   2122  CA  THR   347     -39.591   4.210  -3.118  1.00 35.51       B    C
ATOM   2123  CB  THR   347     -39.701   4.390  -1.582  1.00 37.60       B    C
ATOM   2124  OG1 THR   347     -38.467   4.006  -0.967  1.00 39.20       B    O
ATOM   2125  CG2 THR   347     -40.832   3.548  -1.021  1.00 34.55       B    C
ATOM   2126  C   THR   347     -38.464   5.100  -3.635  1.00 33.43       B    C
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ATOM   2127  O   THR   347     -37.300   4.716  -3.611  1.00 31.83      B    O
ATOM   2128  N   LEU   348     -38.820   6.283  -4.122  1.00 32.22      B    N
ATOM   2129  CA  LEU   348     -37.833   7.231  -4.627  1.00 30.40      B    C
ATOM   2130  CB  LEU   348     -37.946   7.326  -6.158  1.00 29.53      B    C
ATOM   2131  CG  LEU   348     -37.908   5.965  -6.886  1.00 30.64      B    C
ATOM   2132  CD1 LEU   348     -38.457   6.091  -8.307  1.00 27.70      B    C
ATOM   2133  CD2 LEU   348     -36.477   5.436  -6.912  1.00 26.20      B    C
ATOM   2134  C   LEU   348     -38.141   8.573  -3.974  1.00 28.73      B    C
ATOM   2135  O   LEU   348     -39.136   9.214  -4.303  1.00 27.79      B    O
ATOM   2136  N   GLY   349     -37.304   8.997  -3.035  1.00 28.70      B    N
ATOM   2137  CA  GLY   349     -37.703  10.112  -2.193  1.00 27.69      B    C
ATOM   2138  C   GLY   349     -38.999   9.720  -1.508  1.00 28.80      B    C
ATOM   2139  O   GLY   349     -39.113   8.603  -0.998  1.00 28.55      B    O
ATOM   2140  N   THR   350     -39.988  10.612  -1.509  1.00 28.59      B    N
ATOM   2141  CA  THR   350     -41.280  10.309  -0.900  1.00 28.89      B    C
ATOM   2142  CB  THR   350     -41.941  11.574  -0.331  1.00 30.10      B    C
ATOM   2143  OG1 THR   350     -42.291  12.450  -1.411  1.00 26.35      B    O
ATOM   2144  CG2 THR   350     -40.985  12.295   0.634  1.00 27.56      B    C
ATOM   2145  C   THR   350     -42.253   9.686  -1.906  1.00 30.35      B    C
ATOM   2146  O   THR   350     -43.407   9.403  -1.576  1.00 29.28      B    O
ATOM   2147  N   LEU   351     -41.790   9.496  -3.137  1.00 29.53      B    N
ATOM   2148  CA  LEU   351     -42.617   8.896  -4.178  1.00 30.47      B    C
ATOM   2149  CB  LEU   351     -42.669   9.820  -5.409  1.00 28.80      B    C
ATOM   2150  CG  LEU   351     -43.186  11.246  -5.126  1.00 30.54      B    C
ATOM   2151  CD1 LEU   351     -43.285  12.048  -6.426  1.00 30.77      B    C
ATOM   2152  CD2 LEU   351     -44.552  11.184  -4.448  1.00 25.93      B    C
ATOM   2153  C   LEU   351     -42.038   7.525  -4.539  1.00 30.64      B    C
ATOM   2154  O   LEU   351     -41.513   6.825  -3.677  1.00 31.17      B    O
ATOM   2155  N   GLY   352     -42.129   7.136  -5.804  1.00 30.87      B    N
ATOM   2156  CA  GLY   352     -41.659   5.817  -6.181  1.00 30.18      B    C
ATOM   2157  C   GLY   352     -42.283   5.320  -7.466  1.00 30.83      B    C
ATOM   2158  O   GLY   352     -42.842   6.104  -8.233  1.00 30.98      B    O
ATOM   2159  N   THR   353     -42.188   4.018  -7.715  1.00 29.91      B    N
ATOM   2160  CA  THR   353     -42.672   3.480  -8.974  1.00 29.17      B    C
ATOM   2161  CB  THR   353     -42.424   1.964  -9.074  1.00 32.00      B    C
ATOM   2162  OG1 THR   353     -42.923   1.490 -10.333  1.00 28.63      B    O
ATOM   2163  CG2 THR   353     -43.124   1.223  -7.924  1.00 28.13      B    C
ATOM   2164  C   THR   353     -44.164   3.744  -9.122  1.00 28.69      B    C
ATOM   2165  O   THR   353     -44.906   3.718  -8.140  1.00 26.24      B    O
ATOM   2166  N   ASN   354     -44.588   4.022 -10.352  1.00 27.36      B    N
ATOM   2167  CA  ASN   354     -46.005   4.117 -10.680  1.00 28.00      B    C
ATOM   2168  CB  ASN   354     -46.194   4.770 -12.055  1.00 30.00      B    C
ATOM   2169  CG  ASN   354     -46.090   6.295 -12.010  1.00 31.69      B    C
ATOM   2170  OD1 ASN   354     -46.028   6.902 -10.938  1.00 29.46      B    O
ATOM   2171  ND2 ASN   354     -46.079   6.916 -13.184  1.00 30.77      B    N
ATOM   2172  C   ASN   354     -46.625   2.716 -10.692  1.00 29.07      B    C
ATOM   2173  O   ASN   354     -45.915   1.705 -10.658  1.00 28.69      B    O
ATOM   2174  N   PHE   355     -47.948   2.661 -10.741  1.00 28.04      B    N
ATOM   2175  CA  PHE   355     -48.665   1.397 -10.658  1.00 29.51      B    C
ATOM   2176  CB  PHE   355     -49.041   1.118  -9.201  1.00 29.13      B    C
ATOM   2177  CG  PHE   355     -49.523   2.333  -8.465  1.00 29.69      B    C
ATOM   2178  CD1 PHE   355     -48.712   2.959  -7.522  1.00 30.05      B    C
ATOM   2179  CD2 PHE   355     -50.759   2.885  -8.752  1.00 27.67      B    C
ATOM   2180  CE1 PHE   355     -49.128   4.115  -6.887  1.00 28.38      B    C
ATOM   2181  CE2 PHE   355     -51.185   4.043  -8.121  1.00 27.82      B    C
ATOM   2182  CZ  PHE   355     -50.370   4.659  -7.189  1.00 28.92      B    C
ATOM   2183  C   PHE   355     -49.920   1.472 -11.527  1.00 30.09      B    C
ATOM   2184  O   PHE   355     -50.086   2.418 -12.309  1.00 30.27      B    O
ATOM   2185  N   GLY   356     -50.792   0.474 -11.398  1.00 28.41      B    N
ATOM   2186  CA  GLY   356     -52.069   0.519 -12.091  1.00 28.33      B    C
ATOM   2187  C   GLY   356     -52.135  -0.379 -13.314  1.00 30.65      B    C
ATOM   2188  O   GLY   356     -51.204  -1.129 -13.603  1.00 29.89      B    O
ATOM   2189  N   ARG   357     -53.242  -0.295 -14.041  1.00 32.66      B    N
ATOM   2190  CA  ARG   357     -53.536  -1.246 -15.109  1.00 34.90      B    C
ATOM   2191  CB  ARG   357     -55.011  -1.151 -15.493  1.00 34.24      B    C
ATOM   2192  CG  ARG   357     -55.381   0.225 -15.994  1.00 34.62      B    C
ATOM   2193  CD  ARG   357     -56.832   0.346 -16.383  1.00 36.26      B    C
ATOM   2194  NE  ARG   357     -57.105   1.695 -16.856  1.00 40.35      B    N
ATOM   2195  CZ  ARG   357     -56.884   2.102 -18.102  1.00 43.01      B    C
ATOM   2196  NH1 ARG   357     -57.153   3.355 -18.448  1.00 42.62      B    N
ATOM   2197  NH2 ARG   357     -56.406   1.252 -19.005  1.00 41.68      B    N
ATOM   2198  C   ARG   357     -52.683  -1.024 -16.358  1.00 36.92      B    C
ATOM   2199  O   ARG   357     -52.661  -1.881 -17.242  1.00 38.02      B    O
ATOM   2200  N   CYS   358     -51.997   0.119 -16.441  1.00 36.61      B    N
ATOM   2201  CA  CYS   358     -51.170   0.438 -17.612  1.00 35.72      B    C
ATOM   2202  C   CYS   358     -49.745  -0.097 -17.458  1.00 35.12      B    C
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ATOM   2203  O   CYS   358     -48.966  -0.093 -18.410  1.00 34.79      B    O
ATOM   2204  CB  CYS   358     -51.153   1.961 -17.870  1.00 36.69      B    C
ATOM   2205  SG  CYS   358     -52.749   2.584 -18.519  1.00 43.14      B    S
ATOM   2206  N   VAL   359     -49.413  -0.558 -16.255  1.00 33.77      B    N
ATOM   2207  CA  VAL   359     -48.133  -1.222 -16.000  1.00 34.99      B    C
ATOM   2208  CB  VAL   359     -47.739  -1.110 -14.506  1.00 34.05      B    C
ATOM   2209  CG1 VAL   359     -46.472  -1.904 -14.236  1.00 33.57      B    C
ATOM   2210  CG2 VAL   359     -47.546   0.350 -14.127  1.00 35.28      B    C
ATOM   2211  C   VAL   359     -48.233  -2.709 -16.357  1.00 36.56      B    C
ATOM   2212  O   VAL   359     -49.117  -3.410 -15.874  1.00 36.77      B    O
ATOM   2213  N   ASP   360     -47.325  -3.194 -17.193  1.00 37.85      B    N
ATOM   2214  CA  ASP   360     -47.394  -4.581 -17.641  1.00 39.04      B    C
ATOM   2215  CB  ASP   360     -46.818  -4.710 -19.054  1.00 40.07      B    C
ATOM   2216  CG  ASP   360     -47.665  -3.983 -20.093  1.00 45.74      B    C
ATOM   2217  OD1 ASP   360     -48.754  -4.500 -20.443  1.00 46.61      B    O
ATOM   2218  OD2 ASP   360     -47.253  -2.891 -20.553  1.00 46.26      B    O
ATOM   2219  C   ASP   360     -46.669  -5.516 -16.688  1.00 38.35      B    C
ATOM   2220  O   ASP   360     -47.138  -6.618 -16.416  1.00 38.52      B    O
ATOM   2221  N   LEU   361     -45.529  -5.073 -16.173  1.00 37.53      B    N
ATOM   2222  CA  LEU   361     -44.819  -5.839 -15.160  1.00 36.62      B    C
ATOM   2223  CB  LEU   361     -44.105  -7.040 -15.797  1.00 36.73      B    C
ATOM   2224  CG  LEU   361     -42.822  -6.803 -16.601  1.00 38.67      B    C
ATOM   2225  CD1 LEU   361     -42.187  -8.145 -16.944  1.00 39.40      B    C
ATOM   2226  CD2 LEU   361     -43.123  -6.017 -17.870  1.00 36.31      B    C
ATOM   2227  C   LEU   361     -43.809  -4.941 -14.461  1.00 35.32      B    C
ATOM   2228  O   LEU   361     -43.605  -3.803 -14.870  1.00 36.05      B    O
ATOM   2229  N   PHE   362     -43.188  -5.457 -13.405  1.00 33.99      B    N
ATOM   2230  CA  PHE   362     -42.132  -4.743 -12.694  1.00 33.08      B    C
ATOM   2231  CB  PHE   362     -42.420  -4.724 -11.190  1.00 30.37      B    C
ATOM   2232  CG  PHE   362     -43.654  -3.967 -10.831  1.00 30.89      B    C
ATOM   2233  CD1 PHE   362     -43.569  -2.670 -10.348  1.00 30.96      B    C
ATOM   2234  CD2 PHE   362     -44.906  -4.530 -11.021  1.00 29.23      B    C
ATOM   2235  CE1 PHE   362     -44.715  -1.942 -10.065  1.00 30.60      B    C
ATOM   2236  CE2 PHE   362     -46.055  -3.809 -10.741  1.00 31.39      B    C
ATOM   2237  CZ  PHE   362     -45.960  -2.512 -10.264  1.00 31.01      B    C
ATOM   2238  C   PHE   362     -40.791  -5.415 -12.943  1.00 33.60      B    C
ATOM   2239  O   PHE   362     -40.741  -6.566 -13.376  1.00 34.30      B    O
ATOM   2240  N   ALA   363     -39.710  -4.691 -12.676  1.00 31.44      B    N
ATOM   2241  CA  ALA   363     -38.369  -5.240 -12.817  1.00 33.53      B    C
ATOM   2242  CB  ALA   363     -37.893  -5.107 -14.276  1.00 28.46      B    C
ATOM   2243  C   ALA   363     -37.427  -4.497 -11.869  1.00 34.75      B    C
ATOM   2244  O   ALA   363     -37.762  -3.423 -11.364  1.00 36.92      B    O
ATOM   2245  N   PRO   364     -36.241  -5.064 -11.606  1.00 35.95      B    N
ATOM   2246  CD  PRO   364     -35.706  -6.328 -12.149  1.00 36.33      B    C
ATOM   2247  CA  PRO   364     -35.321  -4.446 -10.645  1.00 36.66      B    C
ATOM   2248  CB  PRO   364     -34.068  -5.323 -10.733  1.00 36.17      B    C
ATOM   2249  CG  PRO   364     -34.587  -6.654 -11.198  1.00 36.16      B    C
ATOM   2250  C   PRO   364     -35.032  -2.988 -11.003  1.00 38.49      B    C
ATOM   2251  O   PRO   364     -34.633  -2.685 -12.129  1.00 38.54      B    O
ATOM   2252  N   GLY   365     -35.234  -2.089 -10.043  1.00 38.32      B    N
ATOM   2253  CA  GLY   365     -35.031  -0.679 -10.315  1.00 39.76      B    C
ATOM   2254  C   GLY   365     -34.405   0.111  -9.179  1.00 40.07      B    C
ATOM   2255  O   GLY   365     -34.394   1.339  -9.212  1.00 41.59      B    O
ATOM   2256  N   GLU   366     -33.889  -0.583  -8.172  1.00 40.60      B    N
ATOM   2257  CA  GLU   366     -33.183   0.077  -7.080  1.00 40.85      B    C
ATOM   2258  CB  GLU   366     -33.917  -0.150  -5.752  1.00 42.58      B    C
ATOM   2259  CG  GLU   366     -33.248   0.521  -4.559  1.00 48.40      B    C
ATOM   2260  CD  GLU   366     -34.106   0.485  -3.304  1.00 54.29      B    C
ATOM   2261  OE1 GLU   366     -34.917   1.418  -3.111  1.00 57.21      B    O
ATOM   2262  OE2 GLU   366     -33.970  -0.473  -2.509  1.00 57.42      B    O
ATOM   2263  C   GLU   366     -31.758  -0.446  -6.965  1.00 40.03      B    C
ATOM   2264  O   GLU   366     -31.525  -1.650  -7.067  1.00 40.58      B    O
ATOM   2265  N   ASP   367     -30.805   0.457  -6.750  1.00 39.89      B    N
ATOM   2266  CA  ASP   367     -29.431   0.049  -6.463  1.00 41.10      B    C
ATOM   2267  CB  ASP   367     -29.395  -0.733  -5.141  1.00 42.64      B    C
ATOM   2268  CG  ASP   367     -28.009  -1.250  -4.795  1.00 45.84      B    C
ATOM   2269  OD1 ASP   367     -27.011  -0.548  -5.074  1.00 44.71      B    O
ATOM   2270  OD2 ASP   367     -27.924  -2.370  -4.241  1.00 48.26      B    O
ATOM   2271  C   ASP   367     -28.901  -0.811  -7.609  1.00 40.40      B    C
ATOM   2272  O   ASP   367     -28.403  -1.919  -7.396  1.00 40.34      B    O
ATOM   2273  N   ILE   368     -29.028  -0.286  -8.827  1.00 39.65      B    N
ATOM   2274  CA  ILE   368     -28.660  -1.006 -10.041  1.00 37.49      B    C
ATOM   2275  CB  ILE   368     -29.666  -0.712 -11.182  1.00 36.39      B    C
ATOM   2276  CG2 ILE   368     -29.280  -1.479 -12.429  1.00 34.37      B    C
ATOM   2277  CG1 ILE   368     -31.077  -1.111 -10.751  1.00 36.39      B    C
ATOM   2278  CD1 ILE   368     -31.243  -2.594 -10.488  1.00 34.86      B    C
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ATOM   2279  C   ILE   368     -27.273  -0.570 -10.488  1.00 38.13      B    C
ATOM   2280  O   ILE   368     -27.066   0.586 -10.850  1.00 39.56      B    O
ATOM   2281  N   ILE   369     -26.321  -1.496 -10.464  1.00 38.77      B    N
ATOM   2282  CA  ILE   369     -24.942  -1.164 -10.793  1.00 38.05      B    C
ATOM   2283  CB  ILE   369     -23.963  -2.254 -10.257  1.00 40.93      B    C
ATOM   2284  CG2 ILE   369     -24.175  -3.561 -10.994  1.00 40.09      B    C
ATOM   2285  CG1 ILE   369     -22.513  -1.796 -10.431  1.00 41.68      B    C
ATOM   2286  CD1 ILE   369     -22.120  -0.661  -9.512  1.00 43.24      B    C
ATOM   2287  C   ILE   369     -24.832  -1.059 -12.310  1.00 36.91      B    C
ATOM   2288  O   ILE   369     -25.458  -1.832 -13.032  1.00 36.69      B    O
ATOM   2289  N   GLY   370     -24.059  -0.088 -12.793  1.00 35.97      B    N
ATOM   2290  CA  GLY   370     -23.903   0.086 -14.227  1.00 33.72      B    C
ATOM   2291  C   GLY   370     -22.820   1.086 -14.582  1.00 35.47      B    C
ATOM   2292  O   GLY   370     -22.236   1.723 -13.704  1.00 35.95      B    O
ATOM   2293  N   ALA   371     -22.554   1.235 -15.876  1.00 35.98      B    N
ATOM   2294  CA  ALA   371     -21.494   2.122 -16.342  1.00 36.57      B    C
ATOM   2295  CB  ALA   371     -21.434   2.105 -17.872  1.00 35.87      B    C
ATOM   2296  C   ALA   371     -21.666   3.559 -15.846  1.00 37.33      B    C
ATOM   2297  O   ALA   371     -22.748   4.140 -15.947  1.00 37.39      B    O
ATOM   2298  N   SER   372     -20.587   4.124 -15.314  1.00 37.76      B    N
ATOM   2299  CA  SER   372     -20.548   5.536 -14.962  1.00 39.26      B    C
ATOM   2300  CB  SER   372     -19.956   5.725 -13.568  1.00 38.89      B    C
ATOM   2301  OG  SER   372     -19.422   7.029 -13.430  1.00 38.76      B    O
ATOM   2302  C   SER   372     -19.698   6.290 -15.970  1.00 41.19      B    C
ATOM   2303  O   SER   372     -18.614   5.839 -16.325  1.00 41.88      B    O
ATOM   2304  N   SER   373     -20.184   7.438 -16.429  1.00 41.46      B    N
ATOM   2305  CA  SER   373     -19.452   8.216 -17.417  1.00 44.85      B    C
ATOM   2306  CB  SER   373     -20.398   9.175 -18.148  1.00 44.46      B    C
ATOM   2307  OG  SER   373     -21.089  10.016 -17.241  1.00 45.05      B    O
ATOM   2308  C   SER   373     -18.294   8.998 -16.792  1.00 46.64      B    C
ATOM   2309  O   SER   373     -17.564   9.697 -17.499  1.00 45.89      B    O
ATOM   2310  N   ASP   374     -18.133   8.878 -15.474  1.00 48.09      B    N
ATOM   2311  CA  ASP   374     -16.982   9.461 -14.777  1.00 51.70      B    C
ATOM   2312  CB  ASP   374     -16.901   8.951 -13.334  1.00 53.53      B    C
ATOM   2313  CG  ASP   374     -17.947   9.568 -12.428  1.00 57.35      B    C
ATOM   2314  OD1 ASP   374     -18.587  10.561 -12.841  1.00 56.93      B    O
ATOM   2315  OD2 ASP   374     -18.124   9.057 -11.296  1.00 59.88      B    O
ATOM   2316  C   ASP   374     -15.689   9.083 -15.489  1.00 52.87      B    C
ATOM   2317  O   ASP   374     -14.824   9.926 -15.718  1.00 52.95      B    O
ATOM   2318  N   CYS   375     -15.563   7.804 -15.826  1.00 53.58      B    N
ATOM   2319  CA  CYS   375     -14.369   7.301 -16.484  1.00 54.62      B    C
ATOM   2320  C   CYS   375     -14.696   5.974 -17.154  1.00 53.54      B    C
ATOM   2321  O   CYS   375     -15.668   5.314 -16.787  1.00 52.45      B    O
ATOM   2322  CB  CYS   375     -13.242   7.123 -15.460  1.00 58.13      B    C
ATOM   2323  SG  CYS   375     -13.124   5.485 -14.667  1.00 62.82      B    S
ATOM   2324  N   SER   376     -13.883   5.583 -18.130  1.00 52.69      B    N
ATOM   2325  CA  SER   376     -14.237   4.485 -19.023  1.00 52.99      B    C
ATOM   2326  CB  SER   376     -13.244   4.417 -20.186  1.00 55.67      B    C
ATOM   2327  OG  SER   376     -11.912   4.305 -19.715  1.00 60.26      B    O
ATOM   2328  C   SER   376     -14.334   3.113 -18.358  1.00 51.31      B    C
ATOM   2329  O   SER   376     -14.848   2.170 -18.956  1.00 51.62      B    O
ATOM   2330  N   THR   377     -13.847   2.994 -17.129  1.00 50.35      B    N
ATOM   2331  CA  THR   377     -13.944   1.729 -16.406  1.00 50.61      B    C
ATOM   2332  CB  THR   377     -12.543   1.174 -16.063  1.00 50.74      B    C
ATOM   2333  OG1 THR   377     -11.827   2.134 -15.275  1.00 50.85      B    O
ATOM   2334  CG2 THR   377     -11.754   0.887 -17.343  1.00 49.43      B    C
ATOM   2335  C   THR   377     -14.745   1.877 -15.115  1.00 51.23      B    C
ATOM   2336  O   THR   377     -14.872   0.932 -14.336  1.00 51.68      B    O
ATOM   2337  N   CYS   378     -15.289   3.068 -14.898  1.00 50.52      B    N
ATOM   2338  CA  CYS   378     -15.970   3.396 -13.654  1.00 50.70      B    C
ATOM   2339  C   CYS   378     -17.405   2.861 -13.638  1.00 48.67      B    C
ATOM   2340  O   CYS   378     -18.055   2.764 -14.676  1.00 47.78      B    O
ATOM   2341  CB  CYS   378     -15.942   4.919 -13.456  1.00 55.40      B    C
ATOM   2342  SG  CYS   378     -14.291   5.579 -12.988  1.00 65.66      B    S
ATOM   2343  N   PHE   379     -17.883   2.487 -12.456  1.00 47.08      B    N
ATOM   2344  CA  PHE   379     -19.251   1.997 -12.291  1.00 45.71      B    C
ATOM   2345  CB  PHE   379     -19.256   0.512 -11.908  1.00 45.48      B    C
ATOM   2346  CG  PHE   379     -18.985  -0.414 -13.056  1.00 47.99      B    C
ATOM   2347  CD1 PHE   379     -17.686  -0.645 -13.490  1.00 47.70      B    C
ATOM   2348  CD2 PHE   379     -20.030  -1.060 -13.703  1.00 48.07      B    C
ATOM   2349  CE1 PHE   379     -17.435  -1.504 -14.549  1.00 48.26      B    C
ATOM   2350  CE2 PHE   379     -19.784  -1.921 -14.765  1.00 48.64      B    C
ATOM   2351  CZ  PHE   379     -18.485  -2.143 -15.187  1.00 47.52      B    C
ATOM   2352  C   PHE   379     -19.993   2.782 -11.211  1.00 44.80      B    C
ATOM   2353  O   PHE   379     -19.377   3.334 -10.296  1.00 43.54      B    O
ATOM   2354  N   VAL   380     -21.317   2.820 -11.316  1.00 42.05      B    N
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ATOM   2355  CA  VAL   380     -22.127   3.521 -10.332  1.00 40.25      B    C
ATOM   2356  CB  VAL   380     -22.259   5.027 -10.681  1.00 40.74      B    C
ATOM   2357  CG1 VAL   380     -23.084   5.213 -11.954  1.00 41.04      B    C
ATOM   2358  CG2 VAL   380     -22.875   5.770  -9.522  1.00 40.29      B    C
ATOM   2359  C   VAL   380     -23.510   2.899 -10.228  1.00 40.11      B    C
ATOM   2360  O   VAL   380     -23.989   2.262 -11.164  1.00 41.19      B    O
ATOM   2361  N   SER   381     -24.143   3.085  -9.078  1.00 40.08      B    N
ATOM   2362  CA  SER   381     -25.440   2.485  -8.795  1.00 40.60      B    C
ATOM   2363  CB  SER   381     -25.420   1.908  -7.377  1.00 42.23      B    C
ATOM   2364  OG  SER   381     -26.290   0.800  -7.255  1.00 50.37      B    O
ATOM   2365  C   SER   381     -26.535   3.555  -8.916  1.00 38.85      B    C
ATOM   2366  O   SER   381     -26.363   4.673  -8.436  1.00 37.49      B    O
ATOM   2367  N   GLN   382     -27.652   3.218  -9.556  1.00 38.13      B    N
ATOM   2368  CA  GLN   382     -28.749   4.177  -9.728  1.00 38.91      B    C
ATOM   2369  CB  GLN   382     -28.698   4.803 -11.135  1.00 40.19      B    C
ATOM   2370  CG  GLN   382     -27.519   5.759 -11.344  1.00 43.50      B    C
ATOM   2371  CD  GLN   382     -27.521   6.441 -12.706  1.00 46.54      B    C
ATOM   2372  OE1 GLN   382     -26.583   7.166 -13.047  1.00 48.47      B    O
ATOM   2373  NE2 GLN   382     -28.573   6.214 -13.491  1.00 46.84      B    N
ATOM   2374  C   GLN   382     -30.110   3.525  -9.492  1.00 37.66      B    C
ATOM   2375  O   GLN   382     -30.231   2.301  -9.541  1.00 36.85      B    O
ATOM   2376  N   SER   383     -31.129   4.345  -9.232  1.00 36.81      B    N
ATOM   2377  CA  SER   383     -32.485   3.844  -8.985  1.00 35.64      B    C
ATOM   2378  CB  SER   383     -32.823   3.934  -7.496  1.00 33.25      B    C
ATOM   2379  OG  SER   383     -31.868   3.238  -6.722  1.00 36.82      B    O
ATOM   2380  C   SER   383     -33.545   4.608  -9.776  1.00 34.96      B    C
ATOM   2381  O   SER   383     -33.435   5.824  -9.952  1.00 36.04      B    O
ATOM   2382  N   GLY   384     -34.574   3.890 -10.227  1.00 32.10      B    N
ATOM   2383  CA  GLY   384     -35.681   4.510 -10.940  1.00 31.63      B    C
ATOM   2384  C   GLY   384     -36.335   3.539 -11.913  1.00 31.40      B    C
ATOM   2385  O   GLY   384     -35.765   2.487 -12.214  1.00 30.25      B    O
ATOM   2386  N   THR   385     -37.523   3.868 -12.414  1.00 28.45      B    N
ATOM   2387  CA  THR   385     -38.168   2.968 -13.363  1.00 30.65      B    C
ATOM   2388  CB  THR   385     -39.672   3.309 -13.567  1.00 29.80      B    C
ATOM   2389  OG1 THR   385     -39.818   4.667 -13.991  1.00 29.28      B    O
ATOM   2390  CG2 THR   385     -40.441   3.099 -12.277  1.00 28.97      B    C
ATOM   2391  C   THR   385     -37.457   2.947 -14.726  1.00 31.82      B    C
ATOM   2392  O   THR   385     -37.699   2.057 -15.537  1.00 32.77      B    O
ATOM   2393  N   SER   386     -36.571   3.911 -14.974  1.00 31.74      B    N
ATOM   2394  CA  SER   386     -35.708   3.850 -16.157  1.00 33.93      B    C
ATOM   2395  CB  SER   386     -34.783   5.069 -16.234  1.00 33.38      B    C
ATOM   2396  OG  SER   386     -35.443   6.164 -16.832  1.00 36.51      B    O
ATOM   2397  C   SER   386     -34.850   2.591 -16.139  1.00 34.63      B    C
ATOM   2398  O   SER   386     -34.772   1.872 -17.141  1.00 34.01      B    O
ATOM   2399  N   GLN   387     -34.208   2.333 -14.999  1.00 33.67      B    N
ATOM   2400  CA  GLN   387     -33.372   1.145 -14.838  1.00 33.04      B    C
ATOM   2401  CB  GLN   387     -32.711   1.129 -13.457  1.00 34.28      B    C
ATOM   2402  CG  GLN   387     -31.445   1.968 -13.356  1.00 37.41      B    C
ATOM   2403  CD  GLN   387     -31.704   3.443 -13.583  1.00 40.32      B    C
ATOM   2404  OE1 GLN   387     -30.868   4.154 -14.147  1.00 40.63      B    O
ATOM   2405  NE2 GLN   387     -32.869   3.912 -13.148  1.00 39.93      B    N
ATOM   2406  C   GLN   387     -34.190  -0.126 -15.022  1.00 33.03      B    C
ATOM   2407  O   GLN   387     -33.733  -1.074 -15.660  1.00 34.05      B    O
ATOM   2408  N   ALA   388     -35.401  -0.144 -14.477  1.00 31.18      B    N
ATOM   2409  CA  ALA   388     -36.252  -1.320 -14.606  1.00 31.67      B    C
ATOM   2410  CB  ALA   388     -37.524  -1.156 -13.771  1.00 28.74      B    C
ATOM   2411  C   ALA   388     -36.607  -1.551 -16.073  1.00 32.05      B    C
ATOM   2412  O   ALA   388     -36.515  -2.678 -16.565  1.00 31.61      B    O
ATOM   2413  N   ALA   389     -37.004  -0.490 -16.775  1.00 31.17      B    N
ATOM   2414  CA  ALA   389     -37.349  -0.628 -18.190  1.00 32.08      B    C
ATOM   2415  CB  ALA   389     -37.793   0.711 -18.771  1.00 30.72      B    C
ATOM   2416  C   ALA   389     -36.150  -1.164 -18.974  1.00 32.23      B    C
ATOM   2417  O   ALA   389     -36.309  -1.978 -19.880  1.00 31.54      B    O
ATOM   2418  N   ALA   390     -34.954  -0.708 -18.611  1.00 32.68      B    N
ATOM   2419  CA  ALA   390     -33.736  -1.155 -19.274  1.00 34.67      B    C
ATOM   2420  CB  ALA   390     -32.518  -0.409 -18.713  1.00 31.96      B    C
ATOM   2421  C   ALA   390     -33.546  -2.663 -19.113  1.00 35.82      B    C
ATOM   2422  O   ALA   390     -33.020  -3.320 -20.009  1.00 37.57      B    O
ATOM   2423  N   HIS   391     -33.975  -3.211 -17.980  1.00 35.70      B    N
ATOM   2424  CA  HIS   391     -33.864  -4.649 -17.754  1.00 36.87      B    C
ATOM   2425  CB  HIS   391     -34.258  -5.010 -16.317  1.00 37.29      B    C
ATOM   2426  CG  HIS   391     -33.151  -4.835 -15.331  1.00 40.99      B    C
ATOM   2427  CD2 HIS   391     -32.270  -5.724 -14.813  1.00 42.03      B    C
ATOM   2428  ND1 HIS   391     -32.831  -3.611 -14.781  1.00 42.60      B    N
ATOM   2429  CE1 HIS   391     -31.798  -3.754 -13.968  1.00 43.92      B    C
ATOM   2430  NE2 HIS   391     -31.439  -5.026 -13.970  1.00 43.61      B    N
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ATOM   2431  C   HIS   391     -34.754  -5.411 -18.717  1.00 35.90      B    C
ATOM   2432  O   HIS   391     -34.342  -6.416 -19.292  1.00 36.51      B    O
ATOM   2433  N   VAL   392     -35.981  -4.935 -18.886  1.00 34.43      B    N
ATOM   2434  CA  VAL   392     -36.923  -5.612 -19.755  1.00 33.29      B    C
ATOM   2435  CB  VAL   392     -38.351  -5.076 -19.546  1.00 32.77      B    C
ATOM   2436  CG1 VAL   392     -39.298  -5.720 -20.546  1.00 27.80      B    C
ATOM   2437  CG2 VAL   392     -38.811  -5.369 -18.108  1.00 29.54      B    C
ATOM   2438  C   VAL   392     -36.527  -5.460 -21.221  1.00 35.56      B    C
ATOM   2439  O   VAL   392     -36.869  -6.308 -22.043  1.00 35.03      B    O
ATOM   2440  N   ALA   393     -35.799  -4.392 -21.549  1.00 34.87      B    N
ATOM   2441  CA  ALA   393     -35.324  -4.205 -22.918  1.00 36.30      B    C
ATOM   2442  CB  ALA   393     -34.815  -2.771 -23.126  1.00 33.77      B    C
ATOM   2443  C   ALA   393     -34.207  -5.200 -23.204  1.00 36.76      B    C
ATOM   2444  O   ALA   393     -34.095  -5.712 -24.316  1.00 36.97      B    O
ATOM   2445  N   GLY   394     -33.387  -5.467 -22.191  1.00 37.87      B    N
ATOM   2446  CA  GLY   394     -32.357  -6.481 -22.312  1.00 39.01      B    C
ATOM   2447  C   GLY   394     -32.949  -7.871 -22.474  1.00 40.10      B    C
ATOM   2448  O   GLY   394     -32.509  -8.648 -23.324  1.00 39.59      B    O
ATOM   2449  N   ILE   395     -33.956  -8.181 -21.664  1.00 39.13      B    N
ATOM   2450  CA  ILE   395     -34.650  -9.455 -21.757  1.00 39.13      B    C
ATOM   2451  CB  ILE   395     -35.748  -9.560 -20.674  1.00 38.01      B    C
ATOM   2452  CG2 ILE   395     -36.645 -10.753 -20.945  1.00 36.45      B    C
ATOM   2453  CG1 ILE   395     -35.098  -9.659 -19.294  1.00 36.97      B    C
ATOM   2454  CD1 ILE   395     -36.095  -9.694 -18.144  1.00 37.21      B    C
ATOM   2455  C   ILE   395     -35.273  -9.623 -23.138  1.00 40.54      B    C
ATOM   2456  O   ILE   395     -35.123 -10.667 -23.769  1.00 41.76      B    O
ATOM   2457  N   ALA   396     -35.961  -8.591 -23.615  1.00 40.97      B    N
ATOM   2458  CA  ALA   396     -36.552  -8.636 -24.946  1.00 41.51      B    C
ATOM   2459  CB  ALA   396     -37.257  -7.324 -25.256  1.00 40.19      B    C
ATOM   2460  C   ALA   396     -35.480  -8.907 -25.994  1.00 43.15      B    C
ATOM   2461  O   ALA   396     -35.696  -9.683 -26.925  1.00 42.21      B    O
ATOM   2462  N   ALA   397     -34.323  -8.265 -25.838  1.00 43.28      B    N
ATOM   2463  CA  ALA   397     -33.256  -8.384 -26.824  1.00 44.93      B    C
ATOM   2464  CB  ALA   397     -32.144  -7.388 -26.517  1.00 41.15      B    C
ATOM   2465  C   ALA   397     -32.691  -9.805 -26.871  1.00 46.63      B    C
ATOM   2466  O   ALA   397     -32.350 -10.308 -27.941  1.00 46.80      B    O
ATOM   2467  N   MET   398     -32.594 -10.450 -25.714  1.00 48.13      B    N
ATOM   2468  CA  MET   398     -32.121 -11.827 -25.656  1.00 50.03      B    C
ATOM   2469  CB  MET   398     -31.804 -12.228 -24.218  1.00 52.81      B    C
ATOM   2470  CG  MET   398     -30.565 -11.560 -23.665  1.00 57.71      B    C
ATOM   2471  SD  MET   398     -29.966 -12.387 -22.193  1.00 67.28      B    S
ATOM   2472  CE  MET   398     -28.585 -13.313 -22.886  1.00 65.86      B    C
ATOM   2473  C   MET   398     -33.148 -12.788 -26.231  1.00 49.80      B    C
ATOM   2474  O   MET   398     -32.789 -13.787 -26.851  1.00 50.58      B    O
ATOM   2475  N   MET   399     -34.425 -12.485 -26.028  1.00 47.98      B    N
ATOM   2476  CA  MET   399     -35.484 -13.327 -26.562  1.00 47.27      B    C
ATOM   2477  CB  MET   399     -36.840 -12.911 -25.990  1.00 45.22      B    C
ATOM   2478  CG  MET   399     -37.017 -13.255 -24.527  1.00 45.38      B    C
ATOM   2479  SD  MET   399     -38.534 -12.577 -23.818  1.00 48.51      B    S
ATOM   2480  CE  MET   399     -39.806 -13.462 -24.743  1.00 46.63      B    C
ATOM   2481  C   MET   399     -35.530 -13.262 -28.081  1.00 47.45      B    C
ATOM   2482  O   MET   399     -35.728 -14.277 -28.746  1.00 49.42      B    O
ATOM   2483  N   LEU   400     -35.351 -12.069 -28.632  1.00 47.24      B    N
ATOM   2484  CA  LEU   400     -35.459 -11.880 -30.073  1.00 47.13      B    C
ATOM   2485  CB  LEU   400     -35.760 -10.413 -30.387  1.00 44.02      B    C
ATOM   2486  CG  LEU   400     -37.187 -10.011 -30.011  1.00 44.58      B    C
ATOM   2487  CD1 LEU   400     -37.354  -8.501 -30.076  1.00 43.41      B    C
ATOM   2488  CD2 LEU   400     -38.164 -10.711 -30.952  1.00 42.10      B    C
ATOM   2489  C   LEU   400     -34.183 -12.319 -30.775  1.00 48.10      B    C
ATOM   2490  O   LEU   400     -34.180 -12.610 -31.971  1.00 47.33      B    O
ATOM   2491  N   SER   401     -33.094 -12.366 -30.023  1.00 50.32      B    N
ATOM   2492  CA  SER   401     -31.834 -12.838 -30.567  1.00 53.70      B    C
ATOM   2493  CB  SER   401     -30.697 -12.527 -29.594  1.00 54.32      B    C
ATOM   2494  OG  SER   401     -29.444 -12.848 -30.170  1.00 57.99      B    O
ATOM   2495  C   SER   401     -31.918 -14.344 -30.813  1.00 54.86      B    C
ATOM   2496  O   SER   401     -31.319 -14.864 -31.754  1.00 54.93      B    O
ATOM   2497  N   ALA   402     -32.675 -15.036 -29.968  1.00 55.61      B    N
ATOM   2498  CA  ALA   402     -32.846 -16.477 -30.100  1.00 57.04      B    C
ATOM   2499  CB  ALA   402     -33.043 -17.113 -28.726  1.00 55.75      B    C
ATOM   2500  C   ALA   402     -34.024 -16.815 -31.006  1.00 58.15      B    C
ATOM   2501  O   ALA   402     -34.006 -17.836 -31.688  1.00 60.14      B    O
ATOM   2502  N   GLU   403     -35.045 -15.964 -31.011  1.00 58.70      B    N
ATOM   2503  CA  GLU   403     -36.194 -16.160 -31.889  1.00 59.99      B    C
ATOM   2504  CB  GLU   403     -37.413 -16.601 -31.081  1.00 62.05      B    C
ATOM   2505  CG  GLU   403     -37.226 -17.901 -30.323  1.00 66.30      B    C
ATOM   2506  CD  GLU   403     -38.523 -18.402 -29.719  1.00 69.10      B    C
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ATOM   2507  OE1 GLU   403     -38.640 -18.412 -28.474  1.00 70.24      B    O
ATOM   2508  OE2 GLU   403     -39.429 -18.781 -30.494  1.00 71.43      B    O
ATOM   2509  C   GLU   403     -36.539 -14.887 -32.654  1.00 60.03      B    C
ATOM   2510  O   GLU   403     -37.484 -14.178 -32.304  1.00 59.11      B    O
ATOM   2511  N   PRO   404     -35.783 -14.594 -33.723  1.00 60.25      B    N
ATOM   2512  CD  PRO   404     -34.707 -15.459 -34.235  1.00 60.12      B    C
ATOM   2513  CA  PRO   404     -35.905 -13.356 -34.502  1.00 60.18      B    C
ATOM   2514  CB  PRO   404     -34.887 -13.536 -35.629  1.00 59.91      B    C
ATOM   2515  CG  PRO   404     -33.905 -14.525 -35.090  1.00 60.66      B    C
ATOM   2516  C   PRO   404     -37.311 -13.140 -35.044  1.00 60.30      B    C
ATOM   2517  O   PRO   404     -37.687 -12.021 -35.397  1.00 60.57      B    O
ATOM   2518  N   GLU   405     -38.085 -14.215 -35.106  1.00 60.27      B    N
ATOM   2519  CA  GLU   405     -39.386 -14.164 -35.752  1.00 61.10      B    C
ATOM   2520  CB  GLU   405     -39.648 -15.476 -36.500  1.00 65.84      B    C
ATOM   2521  CG  GLU   405     -40.630 -15.348 -37.662  1.00 73.21      B    C
ATOM   2522  CD  GLU   405     -40.025 -14.645 -38.874  1.00 77.69      B    C
ATOM   2523  OE1 GLU   405     -39.331 -13.618 -38.689  1.00 79.87      B    O
ATOM   2524  OE2 GLU   405     -40.244 -15.121 -40.012  1.00 79.14      B    O
ATOM   2525  C   GLU   405     -40.511 -13.892 -34.754  1.00 58.30      B    C
ATOM   2526  O   GLU   405     -41.654 -13.658 -35.149  1.00 57.76      B    O
ATOM   2527  N   LEU   406     -40.184 -13.922 -33.463  1.00 56.23      B    N
ATOM   2528  CA  LEU   406     -41.152 -13.604 -32.414  1.00 52.90      B    C
ATOM   2529  CB  LEU   406     -40.458 -13.511 -31.057  1.00 53.28      B    C
ATOM   2530  CG  LEU   406     -40.619 -14.650 -30.053  1.00 53.34      B    C
ATOM   2531  CD1 LEU   406     -39.995 -14.228 -28.738  1.00 53.19      B    C
ATOM   2532  CD2 LEU   406     -42.085 -14.973 -29.858  1.00 52.98      B    C
ATOM   2533  C   LEU   406     -41.835 -12.275 -32.696  1.00 51.51      B    C
ATOM   2534  O   LEU   406     -41.177 -11.300 -33.058  1.00 52.21      B    O
ATOM   2535  N   THR   407     -43.152 -12.233 -32.521  1.00 49.89      B    N
ATOM   2536  CA  THR   407     -43.900 -10.987 -32.661  1.00 48.26      B    C
ATOM   2537  CB  THR   407     -45.320 -11.235 -33.201  1.00 48.96      B    C
ATOM   2538  OG1 THR   407     -46.078 -11.974 -32.234  1.00 49.44      B    O
ATOM   2539  CG2 THR   407     -45.264 -12.023 -34.499  1.00 49.09      B    C
ATOM   2540  C   THR   407     -44.029 -10.299 -31.306  1.00 47.33      B    C
ATOM   2541  O   THR   407     -43.786 -10.911 -30.263  1.00 47.26      B    O
ATOM   2542  N   LEU   408     -44.424  -9.029 -31.328  1.00 45.56      B    N
ATOM   2543  CA  LEU   408     -44.622  -8.271 -30.100  1.00 43.80      B    C
ATOM   2544  CB  LEU   408     -45.075  -6.843 -30.426  1.00 42.62      B    C
ATOM   2545  CG  LEU   408     -45.567  -5.998 -29.245  1.00 41.47      B    C
ATOM   2546  CD1 LEU   408     -44.511  -5.948 -28.163  1.00 40.64      B    C
ATOM   2547  CD2 LEU   408     -45.904  -4.605 -29.731  1.00 42.36      B    C
ATOM   2548  C   LEU   408     -45.651  -8.948 -29.197  1.00 43.17      B    C
ATOM   2549  O   LEU   408     -45.408  -9.139 -28.007  1.00 42.28      B    O
ATOM   2550  N   ALA   409     -46.791  -9.322 -29.771  1.00 43.40      B    N
ATOM   2551  CA  ALA   409     -47.849  -9.978 -29.007  1.00 44.35      B    C
ATOM   2552  CB  ALA   409     -49.023 -10.307 -29.922  1.00 44.12      B    C
ATOM   2553  C   ALA   409     -47.339 -11.251 -28.322  1.00 44.96      B    C
ATOM   2554  O   ALA   409     -47.599 -11.475 -27.137  1.00 43.20      B    O
ATOM   2555  N   GLU   410     -46.602 -12.074 -29.066  1.00 44.33      B    N
ATOM   2556  CA  GLU   410     -46.036 -13.294 -28.506  1.00 46.70      B    C
ATOM   2557  CB  GLU   410     -45.371 -14.130 -29.608  1.00 50.37      B    C
ATOM   2558  CG  GLU   410     -46.344 -14.648 -30.661  1.00 57.24      B    C
ATOM   2559  CD  GLU   410     -45.650 -15.186 -31.909  1.00 61.50      B    C
ATOM   2560  OE1 GLU   410     -46.351 -15.766 -32.769  1.00 65.56      B    O
ATOM   2561  OE2 GLU   410     -44.413 -15.031 -32.035  1.00 61.64      B    O
ATOM   2562  C   GLU   410     -45.015 -12.977 -27.419  1.00 44.90      B    C
ATOM   2563  O   GLU   410     -44.977 -13.631 -26.374  1.00 44.41      B    O
ATOM   2564  N   LEU   411     -44.186 -11.971 -27.662  1.00 43.46      B    N
ATOM   2565  CA  LEU   411     -43.159 -11.610 -26.700  1.00 41.39      B    C
ATOM   2566  CB  LEU   411     -42.219 -10.568 -27.303  1.00 41.35      B    C
ATOM   2567  CG  LEU   411     -41.034 -10.165 -26.428  1.00 41.21      B    C
ATOM   2568  CD1 LEU   411     -39.814  -9.918 -27.296  1.00 42.34      B    C
ATOM   2569  CD2 LEU   411     -41.398  -8.924 -25.626  1.00 43.75      B    C
ATOM   2570  C   LEU   411     -43.780 -11.082 -25.408  1.00 40.36      B    C
ATOM   2571  O   LEU   411     -43.311 -11.404 -24.313  1.00 39.22      B    O
ATOM   2572  N   ARG   412     -44.839 -10.284 -25.531  1.00 38.70      B    N
ATOM   2573  CA  ARG   412     -45.516  -9.746 -24.353  1.00 39.79      B    C
ATOM   2574  CB  ARG   412     -46.621  -8.759 -24.763  1.00 39.43      B    C
ATOM   2575  CG  ARG   412     -47.375  -8.151 -23.573  1.00 40.81      B    C
ATOM   2576  CD  ARG   412     -48.584  -7.329 -24.013  1.00 42.83      B    C
ATOM   2577  NE  ARG   412     -48.208  -6.224 -24.891  1.00 46.65      B    N
ATOM   2578  CZ  ARG   412     -48.520  -6.140 -26.181  1.00 49.92      B    C
ATOM   2579  NH1 ARG   412     -48.126  -5.090 -26.891  1.00 51.57      B    N
ATOM   2580  NH2 ARG   412     -49.230  -7.099 -26.766  1.00 50.17      B    N
ATOM   2581  C   ARG   412     -46.120 -10.868 -23.501  1.00 40.47      B    C
ATOM   2582  O   ARG   412     -45.977 -10.870 -22.271  1.00 39.56      B    O
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ATOM   2583  N   GLN   413     -46.791 -11.817 -24.156  1.00 40.04      B    N
ATOM   2584  CA  GLN   413     -47.414 -12.944 -23.456  1.00 38.98      B    C
ATOM   2585  CB  GLN   413     -48.226 -13.807 -24.432  1.00 37.49      B    C
ATOM   2586  CG  GLN   413     -49.486 -13.134 -24.982  1.00 35.37      B    C
ATOM   2587  CD  GLN   413     -50.730 -13.433 -24.154  1.00 38.44      B    C
ATOM   2588  OE1 GLN   413     -50.652 -14.037 -23.079  1.00 37.99      B    O
ATOM   2589  NE2 GLN   413     -51.888 -13.012 -24.655  1.00 38.63      B    N
ATOM   2590  C   GLN   413     -46.362 -13.804 -22.765  1.00 38.99      B    C
ATOM   2591  O   GLN   413     -46.598 -14.322 -21.676  1.00 39.28      B    O
ATOM   2592  N   ARG   414     -45.197 -13.943 -23.387  1.00 40.24      B    N
ATOM   2593  CA  ARG   414     -44.119 -14.719 -22.787  1.00 43.34      B    C
ATOM   2594  CB  ARG   414     -43.034 -15.020 -23.825  1.00 46.55      B    C
ATOM   2595  CG  ARG   414     -43.365 -16.199 -24.712  1.00 52.72      B    C
ATOM   2596  CD  ARG   414     -42.260 -16.497 -25.713  1.00 58.62      B    C
ATOM   2597  NE  ARG   414     -42.618 -17.605 -26.599  1.00 65.06      B    N
ATOM   2598  CZ  ARG   414     -43.771 -17.696 -27.262  1.00 68.06      B    C
ATOM   2599  NH1 ARG   414     -44.692 -16.745 -27.146  1.00 68.20      B    N
ATOM   2600  NH2 ARG   414     -44.005 -18.741 -28.049  1.00 69.29      B    N
ATOM   2601  C   ARG   414     -43.502 -14.018 -21.583  1.00 44.39      B    C
ATOM   2602  O   ARG   414     -43.229 -14.654 -20.564  1.00 44.57      B    O
ATOM   2603  N   LEU   415     -43.283 -12.710 -21.693  1.00 44.56      B    N
ATOM   2604  CA  LEU   415     -42.792 -11.938 -20.555  1.00 45.03      B    C
ATOM   2605  CB  LEU   415     -42.684 -10.453 -20.906  1.00 46.00      B    C
ATOM   2606  CG  LEU   415     -41.424 -10.032 -21.661  1.00 46.93      B    C
ATOM   2607  CD1 LEU   415     -41.516  -8.555 -22.037  1.00 46.93      B    C
ATOM   2608  CD2 LEU   415     -40.210 -10.296 -20.789  1.00 44.97      B    C
ATOM   2609  C   LEU   415     -43.726 -12.103 -19.368  1.00 44.14      B    C
ATOM   2610  O   LEU   415     -43.279 -12.333 -18.247  1.00 43.74      B    O
ATOM   2611  N   ILE   416     -45.026 -11.988 -19.620  1.00 43.81      B    N
ATOM   2612  CA  ILE   416     -46.013 -12.126 -18.556  1.00 44.62      B    C
ATOM   2613  CB  ILE   416     -47.445 -11.843 -19.063  1.00 43.70      B    C
ATOM   2614  CG2 ILE   416     -48.453 -12.190 -17.978  1.00 41.87      B    C
ATOM   2615  CG1 ILE   416     -47.576 -10.375 -19.475  1.00 43.04      B    C
ATOM   2616  CD1 ILE   416     -48.959  -9.995 -19.974  1.00 40.89      B    C
ATOM   2617  C   ILE   416     -45.985 -13.534 -17.982  1.00 46.84      B    C
ATOM   2618  O   ILE   416     -46.015 -13.719 -16.765  1.00 47.38      B    O
ATOM   2619  N   HIS   417     -45.920 -14.526 -18.865  1.00 48.11      B    N
ATOM   2620  CA  HIS   417     -46.011 -15.916 -18.452  1.00 48.47      B    C
ATOM   2621  CB  HIS   417     -46.122 -16.829 -19.675  1.00 50.72      B    C
ATOM   2622  CG  HIS   417     -46.218 -18.280 -19.327  1.00 52.76      B    C
ATOM   2623  CD2 HIS   417     -45.281 -19.259 -19.319  1.00 52.85      B    C
ATOM   2624  ND1 HIS   417     -47.385 -18.862 -18.879  1.00 54.15      B    N
ATOM   2625  CE1 HIS   417     -47.162 -20.135 -18.607  1.00 54.24      B    C
ATOM   2626  NE2 HIS   417     -45.894 -20.401 -18.865  1.00 53.33      B    N
ATOM   2627  C   HIS   417     -44.836 -16.367 -17.593  1.00 48.85      B    C
ATOM   2628  O   HIS   417     -45.018 -17.142 -16.654  1.00 49.47      B    O
ATOM   2629  N   PHE   418     -43.638 -15.885 -17.906  1.00 48.81      B    N
ATOM   2630  CA  PHE   418     -42.432 -16.358 -17.229  1.00 50.61      B    C
ATOM   2631  CB  PHE   418     -41.310 -16.566 -18.247  1.00 53.20      B    C
ATOM   2632  CG  PHE   418     -41.549 -17.719 -19.181  1.00 56.54      B    C
ATOM   2633  CD1 PHE   418     -42.039 -17.505 -20.460  1.00 56.42      B    C
ATOM   2634  CD2 PHE   418     -41.291 -19.021 -18.775  1.00 58.19      B    C
ATOM   2635  CE1 PHE   418     -42.269 -18.565 -21.320  1.00 57.36      B    C
ATOM   2636  CE2 PHE   418     -41.519 -20.089 -19.632  1.00 58.59      B    C
ATOM   2637  CZ  PHE   418     -42.009 -19.859 -20.906  1.00 57.63      B    C
ATOM   2638  C   PHE   418     -41.931 -15.465 -16.089  1.00 50.45      B    C
ATOM   2639  O   PHE   418     -40.865 -15.715 -15.523  1.00 50.20      B    O
ATOM   2640  N   SER   419     -42.694 -14.431 -15.751  1.00 49.81      B    N
ATOM   2641  CA  SER   419     -42.356 -13.573 -14.615  1.00 49.94      B    C
ATOM   2642  CB  SER   419     -43.176 -12.285 -14.664  1.00 50.42      B    C
ATOM   2643  OG  SER   419     -42.857 -11.527 -15.811  1.00 53.88      B    O
ATOM   2644  C   SER   419     -42.638 -14.284 -13.299  1.00 48.56      B    C
ATOM   2645  O   SER   419     -43.483 -15.173 -13.238  1.00 49.17      B    O
ATOM   2646  N   ALA   420     -41.941 -13.884 -12.242  1.00 47.18      B    N
ATOM   2647  CA  ALA   420     -42.274 -14.368 -10.909  1.00 47.78      B    C
ATOM   2648  CB  ALA   420     -41.183 -13.978  -9.926  1.00 45.27      B    C
ATOM   2649  C   ALA   420     -43.615 -13.777 -10.475  1.00 48.76      B    C
ATOM   2650  O   ALA   420     -43.809 -12.565 -10.530  1.00 50.00      B    O
ATOM   2651  N   LYS   421     -44.536 -14.639 -10.054  1.00 48.99      B    N
ATOM   2652  CA  LYS   421     -45.865 -14.210  -9.635  1.00 50.27      B    C
ATOM   2653  CB  LYS   421     -46.913 -15.265 -10.019  1.00 52.20      B    C
ATOM   2654  CG  LYS   421     -47.365 -15.245 -11.477  1.00 53.70      B    C
ATOM   2655  CD  LYS   421     -46.221 -15.548 -12.432  1.00 58.05      B    C
ATOM   2656  CE  LYS   421     -46.722 -16.031 -13.797  1.00 59.76      B    C
ATOM   2657  NZ  LYS   421     -47.727 -15.111 -14.413  1.00 60.22      B    N
ATOM   2658  C   LYS   421     -45.935 -13.964  -8.125  1.00 51.72      B    C
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ATOM   2659  O   LYS   421      -45.293 -14.664  -7.340  1.00 51.06      B    O
ATOM   2660  N   ASP   422      -46.711 -12.959  -7.731  1.00 51.17      B    N
ATOM   2661  CA  ASP   422      -47.116 -12.783  -6.343  1.00 52.74      B    C
ATOM   2662  CB  ASP   422      -47.980 -13.967  -5.899  1.00 55.89      B    C
ATOM   2663  CG  ASP   422      -49.341 -13.978  -6.571  1.00 60.38      B    C
ATOM   2664  OD1 ASP   422      -50.008 -12.919  -6.588  1.00 62.29      B    O
ATOM   2665  OD2 ASP   422      -49.744 -15.045  -7.085  1.00 63.14      B    O
ATOM   2666  C   ASP   422      -45.987 -12.586  -5.339  1.00 51.77      B    C
ATOM   2667  O   ASP   422      -46.155 -12.874  -4.157  1.00 51.33      B    O
ATOM   2668  N   VAL   423      -44.843 -12.091  -5.791  1.00 51.65      B    N
ATOM   2669  CA  VAL   423      -43.753 -11.799  -4.867  1.00 50.55      B    C
ATOM   2670  CB  VAL   423      -42.385 -11.905  -5.564  1.00 52.04      B    C
ATOM   2671  CG1 VAL   423      -42.114 -13.351  -5.942  1.00 51.21      B    C
ATOM   2672  CG2 VAL   423      -42.361 -11.022  -6.803  1.00 51.94      B    C
ATOM   2673  C   VAL   423      -43.878 -10.414  -4.238  1.00 50.83      B    C
ATOM   2674  O   VAL   423      -43.196 -10.111  -3.260  1.00 50.92      B    O
ATOM   2675  N   ILE   424      -44.756  -9.581  -4.797  1.00 49.90      B    N
ATOM   2676  CA  ILE   424      -44.927  -8.203  -4.335  1.00 48.89      B    C
ATOM   2677  CB  ILE   424      -45.264  -7.261  -5.511  1.00 47.42      B    C
ATOM   2678  CG2 ILE   424      -45.468  -5.845  -5.006  1.00 46.42      B    C
ATOM   2679  CG1 ILE   424      -44.148  -7.295  -6.551  1.00 46.55      B    C
ATOM   2680  CD1 ILE   424      -44.528  -6.612  -7.846  1.00 44.25      B    C
ATOM   2681  C   ILE   424      -46.059  -8.081  -3.316  1.00 49.43      B    C
ATOM   2682  O   ILE   424      -47.160  -8.578  -3.544  1.00 49.10      B    O
ATOM   2683  N   ASN   425      -45.802  -7.400  -2.205  1.00 51.29      B    N
ATOM   2684  CA  ASN   425      -46.873  -7.103  -1.256  1.00 53.93      B    C
ATOM   2685  CB  ASN   425      -46.306  -6.833   0.143  1.00 53.60      B    C
ATOM   2686  CG  ASN   425      -47.398  -6.613   1.179  1.00 55.99      B    C
ATOM   2687  OD1 ASN   425      -48.587  -6.600   0.856  1.00 56.43      B    O
ATOM   2688  ND2 ASN   425      -46.997  -6.443   2.433  1.00 57.69      B    N
ATOM   2689  C   ASN   425      -47.668  -5.889  -1.728  1.00 54.29      B    C
ATOM   2690  O   ASN   425      -47.196  -4.754  -1.654  1.00 55.32      B    O
ATOM   2691  N   GLU   426      -48.883  -6.134  -2.200  1.00 54.68      B    N
ATOM   2692  CA  GLU   426      -49.667  -5.102  -2.863  1.00 56.26      B    C
ATOM   2693  CB  GLU   426      -50.764  -5.753  -3.708  1.00 59.36      B    C
ATOM   2694  CG  GLU   426      -51.692  -6.660  -2.922  1.00 65.60      B    C
ATOM   2695  CD  GLU   426      -52.426  -7.656  -3.807  1.00 70.48      B    C
ATOM   2696  OE1 GLU   426      -52.050  -7.798  -4.999  1.00 71.64      B    O
ATOM   2697  OE2 GLU   426      -53.377  -8.298  -3.303  1.00 71.69      B    O
ATOM   2698  C   GLU   426      -50.286  -4.088  -1.901  1.00 55.20      B    C
ATOM   2699  O   GLU   426      -51.016  -3.191  -2.327  1.00 54.27      B    O
ATOM   2700  N   ALA   427      -49.997  -4.227  -0.611  1.00 53.77      B    N
ATOM   2701  CA  ALA   427      -50.452  -3.248   0.375  1.00 52.69      B    C
ATOM   2702  CB  ALA   427      -50.142  -3.741   1.788  1.00 51.14      B    C
ATOM   2703  C   ALA   427      -49.772  -1.900   0.125  1.00 51.48      B    C
ATOM   2704  O   ALA   427      -50.293  -0.850   0.505  1.00 50.75      B    O
ATOM   2705  N   TRP   428      -48.610  -1.939  -0.524  1.00 49.80      B    N
ATOM   2706  CA  TRP   428      -47.888  -0.727  -0.896  1.00 49.29      B    C
ATOM   2707  CB  TRP   428      -46.564  -1.105  -1.566  1.00 51.42      B    C
ATOM   2708  CG  TRP   428      -45.580   0.034  -1.742  1.00 55.20      B    C
ATOM   2709  CD2 TRP   428      -45.451   0.901  -2.883  1.00 55.07      B    C
ATOM   2710  CE2 TRP   428      -44.347   1.749  -2.642  1.00 55.79      B    C
ATOM   2711  CE3 TRP   428      -46.157   1.039  -4.085  1.00 54.96      B    C
ATOM   2712  CD1 TRP   428      -44.580   0.393  -0.879  1.00 55.62      B    C
ATOM   2713  NE1 TRP   428      -43.835   1.419  -1.414  1.00 55.96      B    N
ATOM   2714  CZ2 TRP   428      -43.932   2.722  -3.561  1.00 54.75      B    C
ATOM   2715  CZ3 TRP   428      -45.742   2.009  -5.000  1.00 53.56      B    C
ATOM   2716  CH2 TRP   428      -44.640   2.834  -4.730  1.00 52.93      B    C
ATOM   2717  C   TRP   428      -48.724   0.152  -1.838  1.00 48.43      B    C
ATOM   2718  O   TRP   428      -48.662   1.383  -1.767  1.00 47.88      B    O
ATOM   2719  N   PHE   429      -49.511  -0.478  -2.709  1.00 44.61      B    N
ATOM   2720  CA  PHE   429      -50.352   0.262  -3.645  1.00 43.45      B    C
ATOM   2721  CB  PHE   429      -50.741  -0.622  -4.832  1.00 41.72      B    C
ATOM   2722  CG  PHE   429      -49.569  -1.259  -5.525  1.00 43.10      B    C
ATOM   2723  CD1 PHE   429      -49.537  -2.630  -5.745  1.00 42.99      B    C
ATOM   2724  CD2 PHE   429      -48.493  -0.492  -5.943  1.00 41.43      B    C
ATOM   2725  CE1 PHE   429      -48.448  -3.224  -6.368  1.00 43.54      B    C
ATOM   2726  CE2 PHE   429      -47.403  -1.079  -6.567  1.00 42.19      B    C
ATOM   2727  CZ  PHE   429      -47.380  -2.446  -6.780  1.00 42.81      B    C
ATOM   2728  C   PHE   429      -51.616   0.750  -2.951  1.00 43.79      B    C
ATOM   2729  O   PHE   429      -52.095   0.126  -2.008  1.00 44.37      B    O
ATOM   2730  N   PRO   430      -52.180   1.874  -3.414  1.00 43.28      B    N
ATOM   2731  CD  PRO   430      -51.705   2.808  -4.448  1.00 43.12      B    C
ATOM   2732  CA  PRO   430      -53.468   2.253  -2.877  1.00 44.00      B    C
ATOM   2733  CB  PRO   430      -53.822   3.562  -3.600  1.00 41.64      B    C
ATOM   2734  CG  PRO   430      -52.943   3.592  -4.791  1.00 42.89      B    C
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ATOM   2735  C   PRO   430     -54.508   1.154  -3.147  1.00 46.37      B    C
ATOM   2736  O   PRO   430     -54.406   0.428  -4.141  1.00 45.21      B    O
ATOM   2737  N   GLU   431     -55.488   1.037  -2.257  1.00 48.35      B    N
ATOM   2738  CA  GLU   431     -56.412  -0.092  -2.274  1.00 51.07      B    C
ATOM   2739  CB  GLU   431     -57.493   0.099  -1.209  1.00 55.08      B    C
ATOM   2740  CG  GLU   431     -58.513  -1.030  -1.154  1.00 61.74      B    C
ATOM   2741  CD  GLU   431     -59.551  -0.832  -0.057  1.00 67.18      B    C
ATOM   2742  OE1 GLU   431     -59.472   0.186   0.670  1.00 67.29      B    O
ATOM   2743  OE2 GLU   431     -60.446  -1.699   0.078  1.00 69.23      B    O
ATOM   2744  C   GLU   431     -57.073  -0.291  -3.633  1.00 50.09      B    C
ATOM   2745  O   GLU   431     -57.153  -1.413  -4.127  1.00 49.89      B    O
ATOM   2746  N   ASP   432     -57.543   0.798  -4.232  1.00 48.97      B    N
ATOM   2747  CA  ASP   432     -58.306   0.715  -5.470  1.00 49.55      B    C
ATOM   2748  CB  ASP   432     -59.094   2.015  -5.696  1.00 53.81      B    C
ATOM   2749  CG  ASP   432     -58.192   3.233  -5.900  1.00 58.64      B    C
ATOM   2750  OD1 ASP   432     -56.988   3.178  -5.558  1.00 61.37      B    O
ATOM   2751  OD2 ASP   432     -58.699   4.256  -6.407  1.00 61.51      B    O
ATOM   2752  C   ASP   432     -57.440   0.412  -6.697  1.00 48.17      B    C
ATOM   2753  O   ASP   432     -57.948   0.348  -7.815  1.00 48.22      B    O
ATOM   2754  N   GLN   433     -56.141   0.222  -6.488  1.00 45.67      B    N
ATOM   2755  CA  GLN   433     -55.230  -0.089  -7.588  1.00 44.78      B    C
ATOM   2756  CB  GLN   433     -54.055   0.901  -7.605  1.00 43.98      B    C
ATOM   2757  CG  GLN   433     -54.442   2.340  -7.909  1.00 44.11      B    C
ATOM   2758  CD  GLN   433     -54.838   2.543  -9.360  1.00 45.54      B    C
ATOM   2759  OE1 GLN   433     -54.530   1.723 -10.222  1.00 45.75      B    O
ATOM   2760  NE2 GLN   433     -55.523   3.641  -9.636  1.00 46.92      B    N
ATOM   2761  C   GLN   433     -54.685  -1.511  -7.468  1.00 44.14      B    C
ATOM   2762  O   GLN   433     -54.026  -2.017  -8.376  1.00 42.38      B    O
ATOM   2763  N   ARG   434     -54.950  -2.153  -6.339  1.00 44.08      B    N
ATOM   2764  CA  ARG   434     -54.354  -3.453  -6.068  1.00 45.47      B    C
ATOM   2765  CB  ARG   434     -54.660  -3.868  -4.635  1.00 45.94      B    C
ATOM   2766  CG  ARG   434     -53.833  -3.115  -3.623  1.00 48.40      B    C
ATOM   2767  CD  ARG   434     -54.429  -3.182  -2.233  1.00 48.11      B    C
ATOM   2768  NE  ARG   434     -53.674  -2.337  -1.314  1.00 49.63      B    N
ATOM   2769  CZ  ARG   434     -54.127  -1.911  -0.141  1.00 50.56      B    C
ATOM   2770  NH1 ARG   434     -53.360  -1.144   0.624  1.00 50.03      B    N
ATOM   2771  NH2 ARG   434     -55.343  -2.252   0.267  1.00 49.58      B    N
ATOM   2772  C   ARG   434     -54.827  -4.530  -7.045  1.00 45.92      B    C
ATOM   2773  O   ARG   434     -54.049  -5.396  -7.460  1.00 46.72      B    O
ATOM   2774  N   VAL   435     -56.093  -4.472  -7.428  1.00 44.65      B    N
ATOM   2775  CA  VAL   435     -56.615  -5.460  -8.353  1.00 46.78      B    C
ATOM   2776  CB  VAL   435     -58.163  -5.521  -8.286  1.00 47.93      B    C
ATOM   2777  CG1 VAL   435     -58.772  -4.227  -8.817  1.00 46.92      B    C
ATOM   2778  CG2 VAL   435     -58.660  -6.720  -9.061  1.00 48.93      B    C
ATOM   2779  C   VAL   435     -56.167  -5.141  -9.780  1.00 46.07      B    C
ATOM   2780  O   VAL   435     -56.031  -6.035 -10.614  1.00 47.62      B    O
ATOM   2781  N   LEU   436     -55.917  -3.865 -10.051  1.00 44.26      B    N
ATOM   2782  CA  LEU   436     -55.553  -3.424 -11.394  1.00 41.98      B    C
ATOM   2783  CB  LEU   436     -55.896  -1.946 -11.568  1.00 42.62      B    C
ATOM   2784  CG  LEU   436     -57.362  -1.584 -11.362  1.00 43.63      B    C
ATOM   2785  CD1 LEU   436     -57.563  -0.083 -11.533  1.00 44.20      B    C
ATOM   2786  CD2 LEU   436     -58.195  -2.346 -12.366  1.00 44.78      B    C
ATOM   2787  C   LEU   436     -54.079  -3.631 -11.725  1.00 40.11      B    C
ATOM   2788  O   LEU   436     -53.700  -3.603 -12.891  1.00 40.58      B    O
ATOM   2789  N   THR   437     -53.246  -3.825 -10.708  1.00 38.98      B    N
ATOM   2790  CA  THR   437     -51.802  -3.821 -10.918  1.00 38.27      B    C
ATOM   2791  CB  THR   437     -51.070  -3.044  -9.797  1.00 36.73      B    C
ATOM   2792  OG1 THR   437     -51.579  -1.708  -9.721  1.00 38.09      B    O
ATOM   2793  CG2 THR   437     -49.576  -2.989 -10.077  1.00 35.50      B    C
ATOM   2794  C   THR   437     -51.238  -5.238 -10.959  1.00 38.94      B    C
ATOM   2795  O   THR   437     -51.376  -5.995 -10.003  1.00 39.17      B    O
ATOM   2796  N   PRO   438     -50.580  -5.610 -12.068  1.00 39.47      B    N
ATOM   2797  CD  PRO   438     -50.366  -4.833 -13.299  1.00 39.57      B    C
ATOM   2798  CA  PRO   438     -50.051  -6.972 -12.182  1.00 38.85      B    C
ATOM   2799  CB  PRO   438     -49.477  -7.026 -13.601  1.00 39.01      B    C
ATOM   2800  CG  PRO   438     -50.153  -5.911 -14.333  1.00 41.00      B    C
ATOM   2801  C   PRO   438     -48.983  -7.238 -11.129  1.00 39.53      B    C
ATOM   2802  O   PRO   438     -48.046  -6.454 -10.967  1.00 39.03      B    O
ATOM   2803  N   ASN   439     -49.124  -8.349 -10.418  1.00 39.63      B    N
ATOM   2804  CA  ASN   439     -48.128  -8.746  -9.437  1.00 40.67      B    C
ATOM   2805  CB  ASN   439     -48.802  -9.512  -8.293  1.00 38.48      B    C
ATOM   2806  CG  ASN   439     -47.993  -9.469  -7.011  1.00 39.26      B    C
ATOM   2807  OD1 ASN   439     -46.780  -9.700  -7.017  1.00 37.92      B    O
ATOM   2808  ND2 ASN   439     -48.659  -9.164  -5.902  1.00 38.27      B    N
ATOM   2809  C   ASN   439     -47.074  -9.617 -10.119  1.00 40.97      B    C
ATOM   2810  O   ASN   439     -47.017 -10.827  -9.904  1.00 42.65      B    O
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ATOM   2811  N   LEU   440     -46.245  -8.990 -10.949  1.00 42.11      B    N
ATOM   2812  CA  LEU   440     -45.272  -9.705 -11.774  1.00 41.16      B    C
ATOM   2813  CB  LEU   440     -45.709  -9.701 -13.239  1.00 40.54      B    C
ATOM   2814  CG  LEU   440     -47.068 -10.285 -13.613  1.00 42.30      B    C
ATOM   2815  CD1 LEU   440     -47.350  -9.994 -15.085  1.00 40.42      B    C
ATOM   2816  CD2 LEU   440     -47.070 -11.791 -13.350  1.00 43.28      B    C
ATOM   2817  C   LEU   440     -43.903  -9.043 -11.689  1.00 41.93      B    C
ATOM   2818  O   LEU   440     -43.789  -7.821 -11.825  1.00 41.74      B    O
ATOM   2819  N   VAL   441     -42.868  -9.848 -11.477  1.00 40.59      B    N
ATOM   2820  CA  VAL   441     -41.505  -9.363 -11.592  1.00 41.54      B    C
ATOM   2821  CB  VAL   441     -40.738  -9.535 -10.271  1.00 41.16      B    C
ATOM   2822  CG1 VAL   441     -39.296  -9.066 -10.442  1.00 38.34      B    C
ATOM   2823  CG2 VAL   441     -41.427  -8.732  -9.173  1.00 38.68      B    C
ATOM   2824  C   VAL   441     -40.778 -10.104 -12.710  1.00 43.69      B    C
ATOM   2825  O   VAL   441     -40.721 -11.335 -12.724  1.00 44.56      B    O
ATOM   2826  N   ALA   442     -40.224  -9.339 -13.644  1.00 43.06      B    N
ATOM   2827  CA  ALA   442     -39.686  -9.891 -14.878  1.00 43.65      B    C
ATOM   2828  CB  ALA   442     -39.105  -8.771 -15.740  1.00 41.79      B    C
ATOM   2829  C   ALA   442     -38.621 -10.945 -14.617  1.00 44.49      B    C
ATOM   2830  O   ALA   442     -37.872 -10.867 -13.645  1.00 44.26      B    O
ATOM   2831  N   ALA   443     -38.565 -11.933 -15.498  1.00 46.18      B    N
ATOM   2832  CA  ALA   443     -37.482 -12.903 -15.495  1.00 50.11      B    C
ATOM   2833  CB  ALA   443     -37.823 -14.070 -14.570  1.00 48.90      B    C
ATOM   2834  C   ALA   443     -37.282 -13.397 -16.921  1.00 52.32      B    C
ATOM   2835  O   ALA   443     -38.227 -13.430 -17.709  1.00 51.83      B    O
ATOM   2836  N   LEU   444     -36.049 -13.761 -17.253  1.00 56.33      B    N
ATOM   2837  CA  LEU   444     -35.764 -14.429 -18.520  1.00 61.28      B    C
ATOM   2838  CB  LEU   444     -34.263 -14.678 -18.656  1.00 61.00      B    C
ATOM   2839  CG  LEU   444     -33.435 -13.506 -19.170  1.00 63.12      B    C
ATOM   2840  CD1 LEU   444     -32.002 -13.614 -18.669  1.00 63.64      B    C
ATOM   2841  CD2 LEU   444     -33.493 -13.496 -20.692  1.00 64.35      B    C
ATOM   2842  C   LEU   444     -36.495 -15.761 -18.584  1.00 64.69      B    C
ATOM   2843  O   LEU   444     -36.498 -16.525 -17.619  1.00 64.31      B    O
ATOM   2844  N   PRO   445     -37.133 -16.057 -19.723  1.00 69.05      B    N
ATOM   2845  CD  PRO   445     -37.575 -15.168 -20.811  1.00 69.76      B    C
ATOM   2846  CA  PRO   445     -37.611 -17.430 -19.905  1.00 73.71      B    C
ATOM   2847  CB  PRO   445     -38.227 -17.410 -21.302  1.00 72.46      B    C
ATOM   2848  CG  PRO   445     -38.647 -15.982 -21.487  1.00 71.36      B    C
ATOM   2849  C   PRO   445     -36.445 -18.408 -19.793  1.00 78.03      B    C
ATOM   2850  O   PRO   445     -35.362 -18.161 -20.325  1.00 78.13      B    O
ATOM   2851  N   PRO   446     -36.651 -19.527 -19.080  1.00 82.32      B    N
ATOM   2852  CD  PRO   446     -37.943 -19.951 -18.510  1.00 83.90      B    C
ATOM   2853  CA  PRO   446     -35.597 -20.525 -18.854  1.00 85.07      B    C
ATOM   2854  CB  PRO   446     -36.232 -21.496 -17.861  1.00 84.72      B    C
ATOM   2855  CG  PRO   446     -37.698 -21.392 -18.128  1.00 84.66      B    C
ATOM   2856  C   PRO   446     -35.212 -21.212 -20.162  1.00 87.03      B    C
ATOM   2857  O   PRO   446     -34.532 -22.240 -20.165  1.00 87.51      B    O
ATOM   2858  N   SER   447     -35.651 -20.625 -21.271  1.00 89.12      B    N
ATOM   2859  CA  SER   447     -35.758 -21.351 -22.525  1.00 90.87      B    C
ATOM   2860  CB  SER   447     -37.050 -22.160 -22.518  1.00 91.88      B    C
ATOM   2861  OG  SER   447     -38.112 -21.370 -21.998  1.00 92.23      B    O
ATOM   2862  C   SER   447     -35.741 -20.452 -23.756  1.00 90.74      B    C
ATOM   2863  O   SER   447     -36.541 -19.521 -23.874  1.00 90.17      B    O
ATOM   2864  N   THR   448     -34.832 -20.753 -24.679  1.00 91.65      B    N
ATOM   2865  CA  THR   448     -34.918 -20.222 -26.032  1.00 94.19      B    C
ATOM   2866  CB  THR   448     -33.801 -20.786 -26.906  1.00 93.55      B    C
ATOM   2867  OG1 THR   448     -32.534 -20.327 -26.417  1.00 93.33      B    O
ATOM   2868  CG2 THR   448     -33.977 -20.355 -28.356  1.00 94.55      B    C
ATOM   2869  C   THR   448     -36.260 -20.634 -26.617  1.00 93.02      B    C
ATOM   2870  O   THR   448     -36.811 -19.945 -27.471  1.00 92.63      B    O
ATOM   2871  N   HIS   449     -36.766 -21.772 -26.150  1.00 95.06      B    N
ATOM   2872  CA  HIS   449     -38.137 -22.187 -26.413  1.00 97.82      B    C
ATOM   2873  CB  HIS   449     -38.453 -22.138 -27.911  1.00 99.76      B    C
ATOM   2874  CG  HIS   449     -39.916 -22.245 -28.218  1.00102.61      B    C
ATOM   2875  CD2 HIS   449     -41.006 -22.021 -27.445  1.00103.41      B    C
ATOM   2876  ND1 HIS   449     -40.394 -22.630 -29.452  1.00103.87      B    N
ATOM   2877  CE1 HIS   449     -41.715 -22.640 -29.427  1.00104.64      B    C
ATOM   2878  NE2 HIS   449     -42.112 -22.275 -28.221  1.00104.60      B    N
ATOM   2879  C   HIS   449     -38.379 -23.600 -25.893  1.00 97.73      B    C
ATOM   2880  O   HIS   449     -38.521 -23.812 -24.688  1.00 98.20      B    O
ATOM   2881  N   TRP   453     -45.204 -26.487 -27.136  1.00 95.56      B    N
ATOM   2882  CA  TRP   453     -46.152 -25.433 -27.487  1.00 95.17      B    C
ATOM   2883  CB  TRP   453     -46.794 -25.739 -28.844  1.00 99.16      B    C
ATOM   2884  CG  TRP   453     -47.498 -24.563 -29.442  1.00103.55      B    C
ATOM   2885  CD2 TRP   453     -48.830 -24.117 -29.151  1.00105.47      B    C
ATOM   2886  CE2 TRP   453     -49.061 -22.960 -29.923  1.00106.65      B    C
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ATOM   2887  CE3 TRP   453     -49.848 -24.582 -28.313  1.00106.05      B    C
ATOM   2888  CD1 TRP   453     -46.992 -23.683 -30.355  1.00105.12      B    C
ATOM   2889  NE1 TRP   453     -47.924 -22.716 -30.649  1.00106.63      B    N
ATOM   2890  CZ2 TRP   453     -50.268 -22.262 -29.881  1.00107.38      B    C
ATOM   2891  CZ3 TRP   453     -51.046 -23.887 -28.273  1.00107.05      B    C
ATOM   2892  CH2 TRP   453     -51.246 -22.740 -29.052  1.00107.25      B    C
ATOM   2893  C   TRP   453     -47.238 -25.302 -26.416  1.00 92.26      B    C
ATOM   2894  O   TRP   453     -47.614 -26.289 -25.779  1.00 92.72      B    O
ATOM   2895  N   GLN   454     -47.738 -24.083 -26.218  1.00 87.21      B    N
ATOM   2896  CA  GLN   454     -48.759 -23.836 -25.203  1.00 81.58      B    C
ATOM   2897  CB  GLN   454     -48.099 -23.699 -23.827  1.00 83.76      B    C
ATOM   2898  CG  GLN   454     -46.758 -22.984 -23.846  1.00 86.32      B    C
ATOM   2899  CD  GLN   454     -46.034 -23.072 -22.515  1.00 88.32      B    C
ATOM   2900  OE1 GLN   454     -44.803 -23.013 -22.458  1.00 88.83      B    O
ATOM   2901  NE2 GLN   454     -46.796 -23.215 -21.434  1.00 88.87      B    N
ATOM   2902  C   GLN   454     -49.641 -22.617 -25.486  1.00 76.01      B    C
ATOM   2903  O   GLN   454     -49.328 -21.790 -26.343  1.00 74.63      B    O
ATOM   2904  N   LEU   455     -50.752 -22.527 -24.759  1.00 69.41      B    N
ATOM   2905  CA  LEU   455     -51.741 -21.472 -24.956  1.00 63.14      B    C
ATOM   2906  CB  LEU   455     -53.148 -22.057 -24.850  1.00 60.88      B    C
ATOM   2907  CG  LEU   455     -54.309 -21.066 -24.893  1.00 60.03      B    C
ATOM   2908  CD1 LEU   455     -54.324 -20.347 -26.226  1.00 60.46      B    C
ATOM   2909  CD2 LEU   455     -55.611 -21.803 -24.681  1.00 59.51      B    C
ATOM   2910  C   LEU   455     -51.576 -20.354 -23.928  1.00 59.87      B    C
ATOM   2911  O   LEU   455     -51.792 -20.560 -22.735  1.00 58.28      B    O
ATOM   2912  N   PHE   456     -51.200 -19.169 -24.399  1.00 56.42      B    N
ATOM   2913  CA  PHE   456     -50.964 -18.031 -23.517  1.00 53.64      B    C
ATOM   2914  CB  PHE   456     -49.730 -17.251 -23.971  1.00 55.54      B    C
ATOM   2915  CG  PHE   456     -48.446 -18.011 -23.830  1.00 57.27      B    C
ATOM   2916  CD1 PHE   456     -48.030 -18.468 -22.594  1.00 58.30      B    C
ATOM   2917  CD2 PHE   456     -47.649 -18.260 -24.934  1.00 59.52      B    C
ATOM   2918  CE1 PHE   456     -46.839 -19.163 -22.456  1.00 60.51      B    C
ATOM   2919  CE2 PHE   456     -46.457 -18.954 -24.805  1.00 61.44      B    C
ATOM   2920  CZ  PHE   456     -46.052 -19.406 -23.561  1.00 60.76      B    C
ATOM   2921  C   PHE   456     -52.156 -17.093 -23.496  1.00 50.46      B    C
ATOM   2922  O   PHE   456     -52.654 -16.692 -24.547  1.00 50.85      B    O
ATOM   2923  N   CYS   457     -52.611 -16.746 -22.298  1.00 47.18      B    N
ATOM   2924  CA  CYS   457     -53.642 -15.726 -22.136  1.00 45.36      B    C
ATOM   2925  C   CYS   457     -53.203 -14.696 -21.102  1.00 44.05      B    C
ATOM   2926  O   CYS   457     -52.406 -15.003 -20.219  1.00 43.28      B    O
ATOM   2927  CB  CYS   457     -54.951 -16.347 -21.660  1.00 45.94      B    C
ATOM   2928  SG  CYS   457     -55.799 -17.516 -22.771  1.00 45.03      B    S
ATOM   2929  N   ARG   458     -53.741 -13.483 -21.209  1.00 42.97      B    N
ATOM   2930  CA  ARG   458     -53.467 -12.411 -20.249  1.00 42.03      B    C
ATOM   2931  CB  ARG   458     -52.447 -11.420 -20.827  1.00 40.47      B    C
ATOM   2932  CG  ARG   458     -52.907 -10.782 -22.127  1.00 42.86      B    C
ATOM   2933  CD  ARG   458     -51.781 -10.065 -22.866  1.00 44.13      B    C
ATOM   2934  NE  ARG   458     -51.841  -8.632 -22.622  1.00 49.28      B    N
ATOM   2935  CZ  ARG   458     -52.288  -7.728 -23.485  1.00 47.66      B    C
ATOM   2936  NH1 ARG   458     -52.301  -6.450 -23.135  1.00 50.19      B    N
ATOM   2937  NH2 ARG   458     -52.706  -8.086 -24.690  1.00 47.08      B    N
ATOM   2938  C   ARG   458     -54.770 -11.677 -19.950  1.00 41.18      B    C
ATOM   2939  O   ARG   458     -55.714 -11.721 -20.746  1.00 39.62      B    O
ATOM   2940  N   THR   459     -54.822 -11.004 -18.805  1.00 39.42      B    N
ATOM   2941  CA  THR   459     -55.998 -10.222 -18.453  1.00 39.74      B    C
ATOM   2942  CB  THR   459     -56.336 -10.376 -16.964  1.00 38.66      B    C
ATOM   2943  OG1 THR   459     -56.615 -11.750 -16.683  1.00 41.49      B    O
ATOM   2944  CG2 THR   459     -57.555  -9.544 -16.603  1.00 38.15      B    C
ATOM   2945  C   THR   459     -55.787  -8.743 -18.764  1.00 40.32      B    C
ATOM   2946  O   THR   459     -54.721  -8.189 -18.491  1.00 41.35      B    O
ATOM   2947  N   VAL   460     -56.806  -8.111 -19.336  1.00 39.71      B    N
ATOM   2948  CA  VAL   460     -56.747  -6.691 -19.670  1.00 40.13      B    C
ATOM   2949  CB  VAL   460     -56.849  -6.476 -21.193  1.00 40.81      B    C
ATOM   2950  CG1 VAL   460     -56.918  -4.986 -21.512  1.00 39.94      B    C
ATOM   2951  CG2 VAL   460     -55.657  -7.121 -21.885  1.00 40.01      B    C
ATOM   2952  C   VAL   460     -57.896  -5.940 -19.007  1.00 41.10      B    C
ATOM   2953  O   VAL   460     -59.059  -6.148 -19.350  1.00 41.34      B    O
ATOM   2954  N   TRP   461     -57.577  -5.066 -18.058  1.00 40.15      B    N
ATOM   2955  CA  TRP   461     -58.606  -4.243 -17.438  1.00 41.32      B    C
ATOM   2956  CB  TRP   461     -58.210  -3.864 -16.013  1.00 40.29      B    C
ATOM   2957  CG  TRP   461     -58.327  -4.982 -15.025  1.00 39.72      B    C
ATOM   2958  CD2 TRP   461     -59.316  -5.113 -13.997  1.00 38.69      B    C
ATOM   2959  CE2 TRP   461     -59.013  -6.284 -13.272  1.00 40.64      B    C
ATOM   2960  CE3 TRP   461     -60.426  -4.353 -13.618  1.00 37.91      B    C
ATOM   2961  CD1 TRP   461     -57.490  -6.053 -14.891  1.00 39.19      B    C
ATOM   2962  NE1 TRP   461     -57.894  -6.840 -13.836  1.00 40.77      B    N
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ATOM   2963  CZ2 TRP   461     -59.783  -6.713 -12.191  1.00 39.89      B    C
ATOM   2964  CZ3 TRP   461     -61.189  -4.779 -12.543  1.00 39.15      B    C
ATOM   2965  CH2 TRP   461     -60.863  -5.949 -11.841  1.00 39.06      B    C
ATOM   2966  C   TRP   461     -58.835  -2.974 -18.246  1.00 42.82      B    C
ATOM   2967  O   TRP   461     -57.895  -2.381 -18.774  1.00 42.86      B    O
ATOM   2968  N   SER   462     -60.091  -2.558 -18.339  1.00 44.55      B    N
ATOM   2969  CA  SER   462     -60.421  -1.295 -18.981  1.00 46.47      B    C
ATOM   2970  CB  SER   462     -61.849  -1.328 -19.521  1.00 45.66      B    C
ATOM   2971  OG  SER   462     -62.779  -1.265 -18.452  1.00 43.37      B    O
ATOM   2972  C   SER   462     -60.310  -0.175 -17.956  1.00 48.34      B    C
ATOM   2973  O   SER   462     -60.104  -0.422 -16.764  1.00 46.67      B    O
ATOM   2974  N   ALA   463     -60.460   1.057 -18.429  1.00 50.60      B    N
ATOM   2975  CA  ALA   463     -60.634   2.192 -17.537  1.00 54.46      B    C
ATOM   2976  CB  ALA   463     -60.531   3.493 -18.325  1.00 52.98      B    C
ATOM   2977  C   ALA   463     -61.998   2.095 -16.860  1.00 56.97      B    C
ATOM   2978  O   ALA   463     -62.918   1.478 -17.396  1.00 57.30      B    O
ATOM   2979  N   HIS   464     -62.118   2.704 -15.683  1.00 61.61      B    N
ATOM   2980  CA  HIS   464     -63.404   2.863 -15.000  1.00 65.67      B    C
ATOM   2981  CB  HIS   464     -63.204   3.685 -13.725  1.00 68.34      B    C
ATOM   2982  CG  HIS   464     -64.295   3.520 -12.715  1.00 71.76      B    C
ATOM   2983  CD2 HIS   464     -65.503   4.121 -12.599  1.00 73.40      B    C
ATOM   2984  ND1 HIS   464     -64.191   2.658 -11.644  1.00 73.71      B    N
ATOM   2985  CE1 HIS   464     -65.287   2.736 -10.910  1.00 74.59      B    C
ATOM   2986  NE2 HIS   464     -66.100   3.616 -11.468  1.00 75.04      B    N
ATOM   2987  C   HIS   464     -64.389   3.581 -15.926  1.00 67.55      B    C
ATOM   2988  O   HIS   464     -63.996   4.455 -16.697  1.00 67.46      B    O
ATOM   2989  N   SER   465     -65.667   3.220 -15.847  1.00 70.08      B    N
ATOM   2990  CA  SER   465     -66.655   3.714 -16.806  1.00 72.95      B    C
ATOM   2991  CB  SER   465     -67.866   2.783 -16.852  1.00 71.92      B    C
ATOM   2992  OG  SER   465     -68.608   2.866 -15.648  1.00 70.23      B    O
ATOM   2993  C   SER   465     -67.141   5.122 -16.487  1.00 75.78      B    C
ATOM   2994  O   SER   465     -67.431   5.905 -17.393  1.00 75.65      B    O
ATOM   2995  N   GLY   466     -67.240   5.436 -15.200  1.00 78.79      B    N
ATOM   2996  CA  GLY   466     -67.851   6.689 -14.794  1.00 83.44      B    C
ATOM   2997  C   GLY   466     -69.263   6.487 -14.272  1.00 86.66      B    C
ATOM   2998  O   GLY   466     -69.931   5.523 -14.649  1.00 87.19      B    O
ATOM   2999  N   PRO   467     -69.744   7.388 -13.400  1.00 89.00      B    N
ATOM   3000  CD  PRO   467     -68.954   8.535 -12.924  1.00 89.56      B    C
ATOM   3001  CA  PRO   467     -71.005   7.256 -12.655  1.00 90.53      B    C
ATOM   3002  CB  PRO   467     -70.953   8.409 -11.649  1.00 90.49      B    C
ATOM   3003  CG  PRO   467     -69.503   8.764 -11.549  1.00 90.14      B    C
ATOM   3004  C   PRO   467     -72.283   7.299 -13.496  1.00 91.90      B    C
ATOM   3005  O   PRO   467     -73.355   6.926 -13.016  1.00 92.02      B    O
ATOM   3006  N   THR   468     -72.171   7.755 -14.741  1.00 93.44      B    N
ATOM   3007  CA  THR   468     -73.337   7.899 -15.612  1.00 95.40      B    C
ATOM   3008  CB  THR   468     -72.914   8.237 -17.059  1.00 95.23      B    C
ATOM   3009  OG1 THR   468     -72.106   9.420 -17.060  1.00 95.12      B    O
ATOM   3010  CG2 THR   468     -74.140   8.468 -17.934  1.00 94.69      B    C
ATOM   3011  C   THR   468     -74.178   6.621 -15.635  1.00 97.16      B    C
ATOM   3012  O   THR   468     -73.651   5.514 -15.509  1.00 97.49      B    O
ATOM   3013  N   ARG   469     -75.488   6.780 -15.798  1.00 98.73      B    N
ATOM   3014  CA  ARG   469     -76.407   5.646 -15.781  1.00 99.90      B    C
ATOM   3015  CB  ARG   469     -77.854   6.143 -15.688  1.00102.98      B    C
ATOM   3016  CG  ARG   469     -78.326   6.922 -16.911  1.00106.29      B    C
ATOM   3017  CD  ARG   469     -79.787   7.337 -16.781  1.00108.83      B    C
ATOM   3018  NE  ARG   469     -80.366   7.714 -18.069  1.00111.09      B    N
ATOM   3019  CZ  ARG   469     -81.164   6.930 -18.789  1.00112.01      B    C
ATOM   3020  NH1 ARG   469     -81.644   7.355 -19.951  1.00112.06      B    N
ATOM   3021  NH2 ARG   469     -81.486   5.722 -18.345  1.00112.44      B    N
ATOM   3022  C   ARG   469     -76.243   4.786 -17.032  1.00 98.96      B    C
ATOM   3023  O   ARG   469     -76.478   3.578 -17.002  1.00 98.89      B    O
ATOM   3024  N   MET   470     -75.841   5.422 -18.128  1.00 97.91      B    N
ATOM   3025  CA  MET   470     -75.657   4.732 -19.401  1.00 96.48      B    C
ATOM   3026  CB  MET   470     -76.405   5.475 -20.515  1.00 98.76      B    C
ATOM   3027  CG  MET   470     -77.923   5.370 -20.432  1.00101.49      B    C
ATOM   3028  SD  MET   470     -78.555   3.783 -21.034  1.00104.46      B    S
ATOM   3029  CE  MET   470     -78.069   3.857 -22.774  1.00102.90      B    C
ATOM   3030  C   MET   470     -74.179   4.616 -19.770  1.00 94.05      B    C
ATOM   3031  O   MET   470     -73.837   4.427 -20.938  1.00 93.54      B    O
ATOM   3032  N   ALA   471     -73.308   4.732 -18.771  1.00 90.93      B    N
ATOM   3033  CA  ALA   471     -71.867   4.671 -18.998  1.00 87.61      B    C
ATOM   3034  CB  ALA   471     -71.123   5.251 -17.800  1.00 87.53      B    C
ATOM   3035  C   ALA   471     -71.406   3.239 -19.251  1.00 85.13      B    C
ATOM   3036  O   ALA   471     -71.870   2.300 -18.598  1.00 85.32      B    O
ATOM   3037  N   THR   472     -70.491   3.080 -20.203  1.00 81.39      B    N
ATOM   3038  CA  THR   472     -69.941   1.769 -20.528  1.00 77.96      B    C
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ATOM   3039  CB  THR   472     -70.443   1.275 -21.911  1.00 78.06      B    C
ATOM   3040  OG1 THR   472     -70.026   2.188 -22.933  1.00 77.52      B    O
ATOM   3041  CG2 THR   472     -71.962   1.176 -21.921  1.00 77.75      B    C
ATOM   3042  C   THR   472     -68.412   1.784 -20.539  1.00 75.20      B    C
ATOM   3043  O   THR   472     -67.789   2.776 -20.922  1.00 74.74      B    O
ATOM   3044  N   ALA   473     -67.813   0.676 -20.113  1.00 71.92      B    N
ATOM   3045  CA  ALA   473     -66.366   0.503 -20.194  1.00 68.57      B    C
ATOM   3046  CB  ALA   473     -65.827   0.020 -18.858  1.00 67.75      B    C
ATOM   3047  C   ALA   473     -66.020  -0.497 -21.297  1.00 66.77      B    C
ATOM   3048  O   ALA   473     -66.775  -1.433 -21.554  1.00 66.07      B    O
ATOM   3049  N   ILE   474     -64.879  -0.293 -21.947  1.00 64.89      B    N
ATOM   3050  CA  ILE   474     -64.443  -1.170 -23.025  1.00 63.32      B    C
ATOM   3051  CB  ILE   474     -64.477  -0.437 -24.369  1.00 64.64      B    C
ATOM   3052  CG2 ILE   474     -64.014  -1.361 -25.482  1.00 63.94      B    C
ATOM   3053  CG1 ILE   474     -65.896   0.056 -24.652  1.00 67.76      B    C
ATOM   3054  CD1 ILE   474     -65.983   0.995 -25.843  1.00 71.25      B    C
ATOM   3055  C   ILE   474     -63.026  -1.685 -22.801  1.00 61.20      B    C
ATOM   3056  O   ILE   474     -62.100  -0.907 -22.575  1.00 62.29      B    O
ATOM   3057  N   ALA   475     -62.864  -3.002 -22.866  1.00 57.61      B    N
ATOM   3058  CA  ALA   475     -61.548  -3.619 -22.783  1.00 54.56      B    C
ATOM   3059  CB  ALA   475     -61.525  -4.641 -21.662  1.00 53.14      B    C
ATOM   3060  C   ALA   475     -61.222  -4.284 -24.113  1.00 53.19      B    C
ATOM   3061  O   ALA   475     -62.025  -5.050 -24.643  1.00 52.48      B    O
ATOM   3062  N   ARG   476     -60.046  -3.984 -24.655  1.00 52.78      B    N
ATOM   3063  CA  ARG   476     -59.651  -4.501 -25.960  1.00 52.83      B    C
ATOM   3064  CB  ARG   476     -59.378  -3.352 -26.936  1.00 55.93      B    C
ATOM   3065  CG  ARG   476     -60.608  -2.550 -27.326  1.00 61.00      B    C
ATOM   3066  CD  ARG   476     -60.279  -1.499 -28.382  1.00 64.35      B    C
ATOM   3067  NE  ARG   476     -61.444  -0.677 -28.700  1.00 67.87      B    N
ATOM   3068  CZ  ARG   476     -61.840   0.369 -27.978  1.00 70.61      B    C
ATOM   3069  NH1 ARG   476     -61.160   0.726 -26.894  1.00 70.19      B    N
ATOM   3070  NH2 ARG   476     -62.925   1.048 -28.331  1.00 71.97      B    N
ATOM   3071  C   ARG   476     -58.411  -5.376 -25.873  1.00 51.34      B    C
ATOM   3072  O   ARG   476     -57.620  -5.264 -24.938  1.00 51.28      B    O
ATOM   3073  N   CYS   477     -58.247  -6.244 -26.863  1.00 50.36      B    N
ATOM   3074  CA  CYS   477     -57.048  -7.057 -26.983  1.00 50.00      B    C
ATOM   3075  C   CYS   477     -56.135  -6.474 -28.053  1.00 49.37      B    C
ATOM   3076  O   CYS   477     -56.556  -5.638 -28.852  1.00 48.36      B    O
ATOM   3077  CB  CYS   477     -57.416  -8.495 -27.358  1.00 51.30      B    C
ATOM   3078  SG  CYS   477     -58.397  -9.398 -26.112  1.00 54.92      B    S
ATOM   3079  N   ALA   478     -54.883  -6.917 -28.065  1.00 49.69      B    N
ATOM   3080  CA  ALA   478     -53.979  -6.597 -29.163  1.00 52.29      B    C
ATOM   3081  CB  ALA   478     -52.579  -7.101 -28.852  1.00 50.02      B    C
ATOM   3082  C   ALA   478     -54.502  -7.248 -30.443  1.00 54.47      B    C
ATOM   3083  O   ALA   478     -55.233  -8.239 -30.394  1.00 54.91      B    O
ATOM   3084  N   PRO   479     -54.131  -6.695 -31.608  1.00 56.47      B    N
ATOM   3085  CD  PRO   479     -53.268  -5.506 -31.723  1.00 56.66      B    C
ATOM   3086  CA  PRO   479     -54.627  -7.142 -32.919  1.00 56.71      B    C
ATOM   3087  CB  PRO   479     -53.914  -6.215 -33.905  1.00 57.17      B    C
ATOM   3088  CG  PRO   479     -53.584  -4.994 -33.097  1.00 57.72      B    C
ATOM   3089  C   PRO   479     -54.370  -8.621 -33.235  1.00 56.70      B    C
ATOM   3090  O   PRO   479     -55.207  -9.283 -33.849  1.00 56.36      B    O
ATOM   3091  N   ASP   480     -53.217  -9.137 -32.822  1.00 56.51      B    N
ATOM   3092  CA  ASP   480     -52.884 -10.536 -33.077  1.00 56.90      B    C
ATOM   3093  CB  ASP   480     -51.368 -10.737 -33.009  1.00 60.77      B    C
ATOM   3094  CG  ASP   480     -50.655 -10.216 -34.244  1.00 65.51      B    C
ATOM   3095  OD1 ASP   480     -51.324  -9.580 -35.090  1.00 67.40      B    O
ATOM   3096  OD2 ASP   480     -49.430 -10.445 -34.372  1.00 67.85      B    O
ATOM   3097  C   ASP   480     -53.566 -11.511 -32.113  1.00 55.43      B    C
ATOM   3098  O   ASP   480     -53.440 -12.727 -32.262  1.00 55.84      B    O
ATOM   3099  N   GLU   481     -54.281 -10.977 -31.125  1.00 52.35      B    N
ATOM   3100  CA  GLU   481     -54.880 -11.795 -30.074  1.00 50.24      B    C
ATOM   3101  CB  GLU   481     -54.680 -11.134 -28.704  1.00 47.61      B    C
ATOM   3102  CG  GLU   481     -53.231 -11.099 -28.221  1.00 46.45      B    C
ATOM   3103  CD  GLU   481     -53.058 -10.302 -26.934  1.00 44.57      B    C
ATOM   3104  OE1 GLU   481     -52.173 -10.651 -26.123  1.00 42.50      B    O
ATOM   3105  OE2 GLU   481     -53.811  -9.326 -26.737  1.00 43.51      B    O
ATOM   3106  C   GLU   481     -56.370 -12.031 -30.306  1.00 49.74      B    C
ATOM   3107  O   GLU   481     -57.041 -11.239 -30.967  1.00 49.49      B    O
ATOM   3108  N   GLU   482     -56.879 -13.130 -29.759  1.00 48.52      B    N
ATOM   3109  CA  GLU   482     -58.315 -13.385 -29.740  1.00 46.82      B    C
ATOM   3110  CB  GLU   482     -58.594 -14.859 -30.040  1.00 46.77      B    C
ATOM   3111  CG  GLU   482     -57.890 -15.387 -31.271  1.00 49.47      B    C
ATOM   3112  CD  GLU   482     -58.568 -14.957 -32.554  1.00 51.58      B    C
ATOM   3113  OE1 GLU   482     -59.695 -14.418 -32.472  1.00 50.06      B    O
ATOM   3114  OE2 GLU   482     -57.975 -15.162 -33.638  1.00 54.21      B    O
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ATOM   3115  C   GLU   482     -58.851 -13.050 -28.356  1.00 45.01      B    C
ATOM   3116  O   GLU   482     -58.211 -13.351 -27.352  1.00 44.86      B    O
ATOM   3117  N   LEU   483     -60.024 -12.433 -28.301  1.00 44.07      B    N
ATOM   3118  CA  LEU   483     -60.709 -12.256 -27.030  1.00 45.33      B    C
ATOM   3119  CB  LEU   483     -61.583 -11.003 -27.075  1.00 46.54      B    C
ATOM   3120  CG  LEU   483     -62.243 -10.640 -25.742  1.00 49.38      B    C
ATOM   3121  CD1 LEU   483     -62.160  -9.140 -25.513  1.00 52.67      B    C
ATOM   3122  CD2 LEU   483     -63.684 -11.100 -25.745  1.00 51.11      B    C
ATOM   3123  C   LEU   483     -61.570 -13.484 -26.731  1.00 44.81      B    C
ATOM   3124  O   LEU   483     -62.583 -13.710 -27.390  1.00 44.85      B    O
ATOM   3125  N   LEU   484     -61.165 -14.277 -25.741  1.00 44.25      B    N
ATOM   3126  CA  LEU   484     -61.836 -15.545 -25.459  1.00 43.90      B    C
ATOM   3127  CB  LEU   484     -60.820 -16.618 -25.064  1.00 41.25      B    C
ATOM   3128  CG  LEU   484     -59.820 -17.008 -26.151  1.00 40.18      B    C
ATOM   3129  CD1 LEU   484     -59.149 -18.324 -25.797  1.00 38.70      B    C
ATOM   3130  CD2 LEU   484     -60.544 -17.131 -27.465  1.00 40.84      B    C
ATOM   3131  C   LEU   484     -62.908 -15.444 -24.380  1.00 44.90      B    C
ATOM   3132  O   LEU   484     -63.754 -16.326 -24.262  1.00 46.30      B    O
ATOM   3133  N   SER   485     -62.873 -14.380 -23.587  1.00 46.22      B    N
ATOM   3134  CA  SER   485     -63.958 -14.123 -22.647  1.00 46.47      B    C
ATOM   3135  CB  SER   485     -63.866 -15.065 -21.450  1.00 46.34      B    C
ATOM   3136  OG  SER   485     -62.827 -14.667 -20.580  1.00 45.49      B    O
ATOM   3137  C   SER   485     -63.972 -12.684 -22.152  1.00 46.84      B    C
ATOM   3138  O   SER   485     -63.101 -11.886 -22.486  1.00 47.34      B    O
ATOM   3139  N   CYS   486     -64.968 -12.373 -21.333  1.00 48.22      B    N
ATOM   3140  CA  CYS   486     -65.299 -10.997 -21.000  1.00 49.92      B    C
ATOM   3141  C   CYS   486     -66.118 -10.992 -19.719  1.00 49.99      B    C
ATOM   3142  O   CYS   486     -67.213 -11.557 -19.675  1.00 50.31      B    O
ATOM   3143  CB  CYS   486     -66.103 -10.386 -22.151  1.00 52.24      B    C
ATOM   3144  SG  CYS   486     -66.813  -8.726 -21.890  1.00 59.49      B    S
ATOM   3145  N   SER   487     -65.581 -10.372 -18.672  1.00 49.69      B    N
ATOM   3146  CA  SER   487     -66.331 -10.198 -17.431  1.00 49.46      B    C
ATOM   3147  CB  SER   487     -65.750 -11.083 -16.328  1.00 48.38      B    C
ATOM   3148  OG  SER   487     -64.402 -10.754 -16.063  1.00 49.39      B    O
ATOM   3149  C   SER   487     -66.328  -8.736 -16.989  1.00 49.59      B    C
ATOM   3150  O   SER   487     -65.852  -7.863 -17.713  1.00 49.27      B    O
ATOM   3151  N   SER   488     -66.872  -8.470 -15.807  1.00 49.56      B    N
ATOM   3152  CA  SER   488     -66.998  -7.100 -15.333  1.00 51.42      B    C
ATOM   3153  CB  SER   488     -68.295  -6.485 -15.853  1.00 50.06      B    C
ATOM   3154  OG  SER   488     -69.420  -7.186 -15.358  1.00 50.85      B    O
ATOM   3155  C   SER   488     -66.963  -7.035 -13.814  1.00 53.00      B    C
ATOM   3156  O   SER   488     -67.233  -8.022 -13.135  1.00 54.35      B    O
ATOM   3157  N   PHE   489     -66.614  -5.869 -13.284  1.00 55.50      B    N
ATOM   3158  CA  PHE   489     -66.478  -5.700 -11.842  1.00 58.01      B    C
ATOM   3159  CB  PHE   489     -65.049  -6.037 -11.405  1.00 56.05      B    C
ATOM   3160  CG  PHE   489     -64.765  -5.733  -9.959  1.00 56.36      B    C
ATOM   3161  CD1 PHE   489     -65.412  -6.426  -8.949  1.00 56.87      B    C
ATOM   3162  CD2 PHE   489     -63.842  -4.759  -9.611  1.00 55.96      B    C
ATOM   3163  CE1 PHE   489     -65.145  -6.156  -7.615  1.00 56.29      B    C
ATOM   3164  CE2 PHE   489     -63.570  -4.483  -8.281  1.00 55.63      B    C
ATOM   3165  CZ  PHE   489     -64.223  -5.183  -7.281  1.00 55.87      B    C
ATOM   3166  C   PHE   489     -66.829  -4.280 -11.405  1.00 60.88      B    C
ATOM   3167  O   PHE   489     -66.417  -3.298 -12.028  1.00 60.67      B    O
ATOM   3168  N   SER   490     -67.604  -4.188 -10.330  1.00 64.50      B    N
ATOM   3169  CA  SER   490     -67.931  -2.913  -9.704  1.00 68.24      B    C
ATOM   3170  CB  SER   490     -69.370  -2.513 -10.038  1.00 68.91      B    C
ATOM   3171  OG  SER   490     -69.721  -1.289  -9.418  1.00 72.44      B    O
ATOM   3172  C   SER   490     -67.779  -3.094  -8.200  1.00 70.33      B    C
ATOM   3173  O   SER   490     -68.275  -4.068  -7.636  1.00 70.86      B    O
ATOM   3174  N   ARG   491     -67.085  -2.167  -7.549  1.00 72.98      B    N
ATOM   3175  CA  ARG   491     -66.842  -2.300  -6.118  1.00 75.53      B    C
ATOM   3176  CB  ARG   491     -65.779  -1.295  -5.666  1.00 77.17      B    C
ATOM   3177  CG  ARG   491     -64.422  -1.536  -6.308  1.00 80.24      B    C
ATOM   3178  CD  ARG   491     -63.325  -0.685  -5.687  1.00 82.34      B    C
ATOM   3179  NE  ARG   491     -62.027  -0.962  -6.299  1.00 83.86      B    N
ATOM   3180  CZ  ARG   491     -61.603  -0.412  -7.434  1.00 84.91      B    C
ATOM   3181  NH1 ARG   491     -60.408  -0.725  -7.917  1.00 84.85      B    N
ATOM   3182  NH2 ARG   491     -62.373   0.453  -8.086  1.00 84.91      B    N
ATOM   3183  C   ARG   491     -68.133  -2.099  -5.334  1.00 76.00      B    C
ATOM   3184  O   ARG   491     -68.302  -2.649  -4.248  1.00 75.57      B    O
ATOM   3185  N   SER   492     -69.047  -1.317  -5.901  1.00 77.48      B    N
ATOM   3186  CA  SER   492     -70.354  -1.096  -5.290  1.00 79.37      B    C
ATOM   3187  CB  SER   492     -71.028   0.129  -5.911  1.00 79.14      B    C
ATOM   3188  OG  SER   492     -71.317  -0.090  -7.282  1.00 79.09      B    O
ATOM   3189  C   SER   492     -71.240  -2.321  -5.494  1.00 80.75      B    C
ATOM   3190  O   SER   492     -72.065  -2.652  -4.642  1.00 81.44      B    O
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ATOM   3191  N   GLY   493     -71.062  -2.988  -6.631  1.00 81.13      B    N
ATOM   3192  CA  GLY   493     -71.864  -4.157  -6.939  1.00 80.72      B    C
ATOM   3193  C   GLY   493     -73.023  -3.825  -7.858  1.00 80.78      B    C
ATOM   3194  O   GLY   493     -73.689  -4.719  -8.378  1.00 80.89      B    O
ATOM   3195  N   LYS   494     -73.263  -2.533  -8.060  1.00 80.45      B    N
ATOM   3196  CA  LYS   494     -74.352  -2.082  -8.917  1.00 79.64      B    C
ATOM   3197  CB  LYS   494     -74.821  -0.690  -8.484  1.00 81.16      B    C
ATOM   3198  CG  LYS   494     -75.389  -0.633  -7.071  1.00 83.07      B    C
ATOM   3199  CD  LYS   494     -75.838   0.779  -6.712  1.00 84.54      B    C
ATOM   3200  CE  LYS   494     -76.744   0.789  -5.483  1.00 85.65      B    C
ATOM   3201  NZ  LYS   494     -76.058   0.292  -4.255  1.00 85.21      B    N
ATOM   3202  C   LYS   494     -73.900  -2.040 -10.369  1.00 78.44      B    C
ATOM   3203  O   LYS   494     -73.266  -1.081 -10.805  1.00 78.70      B    O
ATOM   3204  N   ARG   495     -74.232  -3.087 -11.115  1.00 77.53      B    N
ATOM   3205  CA  ARG   495     -73.848  -3.179 -12.519  1.00 76.32      B    C
ATOM   3206  CB  ARG   495     -72.525  -3.933 -12.655  1.00 76.14      B    C
ATOM   3207  CG  ARG   495     -72.587  -5.346 -12.128  1.00 75.82      B    C
ATOM   3208  CD  ARG   495     -71.211  -5.965 -12.011  1.00 76.68      B    C
ATOM   3209  NE  ARG   495     -71.292  -7.320 -11.477  1.00 77.74      B    N
ATOM   3210  CZ  ARG   495     -71.266  -8.420 -12.223  1.00 78.22      B    C
ATOM   3211  NH1 ARG   495     -71.350  -9.613 -11.649  1.00 78.62      B    N
ATOM   3212  NH2 ARG   495     -71.150  -8.330 -13.541  1.00 78.31      B    N
ATOM   3213  C   ARG   495     -74.930  -3.909 -13.297  1.00 75.33      B    C
ATOM   3214  O   ARG   495     -75.787  -4.564 -12.708  1.00 75.07      B    O
ATOM   3215  N   ARG   496     -74.890  -3.795 -14.619  1.00 74.53      B    N
ATOM   3216  CA  ARG   496     -75.827  -4.522 -15.464  1.00 74.26      B    C
ATOM   3217  CB  ARG   496     -76.653  -3.540 -16.299  1.00 75.26      B    C
ATOM   3218  CG  ARG   496     -77.599  -2.676 -15.472  1.00 77.17      B    C
ATOM   3219  CD  ARG   496     -78.601  -1.945 -16.354  1.00 78.98      B    C
ATOM   3220  NE  ARG   496     -77.937  -1.117 -17.358  1.00 82.03      B    N
ATOM   3221  CZ  ARG   496     -78.553  -0.564 -18.398  1.00 83.71      B    C
ATOM   3222  NH1 ARG   496     -79.855  -0.747 -18.580  1.00 84.51      B    N
ATOM   3223  NH2 ARG   496     -77.864   0.174 -19.260  1.00 84.84      B    N
ATOM   3224  C   ARG   496     -75.124  -5.533 -16.374  1.00 73.26      B    C
ATOM   3225  O   ARG   496     -75.604  -5.837 -17.467  1.00 72.51      B    O
ATOM   3226  N   GLY   497     -73.985  -6.049 -15.917  1.00 71.89      B    N
ATOM   3227  CA  GLY   497     -73.320  -7.124 -16.632  1.00 70.45      B    C
ATOM   3228  C   GLY   497     -72.398  -6.668 -17.747  1.00 69.59      B    C
ATOM   3229  O   GLY   497     -71.964  -5.517 -17.776  1.00 69.36      B    O
ATOM   3230  N   GLU   498     -72.098  -7.578 -18.670  1.00 68.77      B    N
ATOM   3231  CA  GLU   498     -71.173  -7.288 -19.760  1.00 68.48      B    C
ATOM   3232  CB  GLU   498     -69.744  -7.653 -19.350  1.00 67.95      B    C
ATOM   3233  CG  GLU   498     -69.474  -9.150 -19.254  1.00 67.56      B    C
ATOM   3234  CD  GLU   498     -70.106  -9.795 -18.030  1.00 68.08      B    C
ATOM   3235  OE1 GLU   498     -69.782  -9.383 -16.895  1.00 67.57      B    O
ATOM   3236  OE2 GLU   498     -70.927 -10.720 -18.202  1.00 69.43      B    O
ATOM   3237  C   GLU   498     -71.550  -8.052 -21.024  1.00 68.67      B    C
ATOM   3238  O   GLU   498     -72.284  -9.037 -20.968  1.00 67.70      B    O
ATOM   3239  N   ARG   499     -71.046  -7.590 -22.162  1.00 69.43      B    N
ATOM   3240  CA  ARG   499     -71.295  -8.254 -23.434  1.00 72.09      B    C
ATOM   3241  CB  ARG   499     -72.483  -7.606 -24.149  1.00 74.63      B    C
ATOM   3242  CG  ARG   499     -72.297  -6.129 -24.460  1.00 79.98      B    C
ATOM   3243  CD  ARG   499     -73.461  -5.591 -25.277  1.00 83.74      B    C
ATOM   3244  NE  ARG   499     -73.573  -6.288 -26.557  1.00 88.28      B    N
ATOM   3245  CZ  ARG   499     -74.571  -6.120 -27.420  1.00 90.00      B    C
ATOM   3246  NH1 ARG   499     -74.582  -6.802 -28.559  1.00 90.05      B    N
ATOM   3247  NH2 ARG   499     -75.558  -5.275 -27.142  1.00 90.84      B    N
ATOM   3248  C   ARG   499     -70.065  -8.186 -24.329  1.00 72.18      B    C
ATOM   3249  O   ARG   499     -69.243  -7.284 -24.200  1.00 71.77      B    O
ATOM   3250  N   MET   500     -69.939  -9.151 -25.232  1.00 73.12      B    N
ATOM   3251  CA  MET   500     -68.895  -9.109 -26.245  1.00 74.86      B    C
ATOM   3252  CB  MET   500     -68.290 -10.498 -26.439  1.00 75.04      B    C
ATOM   3253  CG  MET   500     -67.541 -11.022 -25.231  1.00 75.98      B    C
ATOM   3254  SD  MET   500     -67.019 -12.735 -25.437  1.00 77.64      B    S
ATOM   3255  CE  MET   500     -68.472 -13.608 -24.783  1.00 75.19      B    C
ATOM   3256  C   MET   500     -69.471  -8.611 -27.565  1.00 75.89      B    C
ATOM   3257  O   MET   500     -70.349  -9.244 -28.147  1.00 75.73      B    O
ATOM   3258  N   GLU   501     -68.971  -7.471 -28.029  1.00 77.75      B    N
ATOM   3259  CA  GLU   501     -69.475  -6.838 -29.242  1.00 79.49      B    C
ATOM   3260  CB  GLU   501     -69.823  -5.372 -28.975  1.00 80.04      B    C
ATOM   3261  CG  GLU   501     -70.879  -5.151 -27.908  1.00 82.37      B    C
ATOM   3262  CD  GLU   501     -71.193  -3.677 -27.702  1.00 83.60      B    C
ATOM   3263  OE1 GLU   501     -70.530  -2.832 -28.343  1.00 83.92      B    O
ATOM   3264  OE2 GLU   501     -72.102  -3.367 -26.901  1.00 84.18      B    O
ATOM   3265  C   GLU   501     -68.432  -6.897 -30.343  1.00 80.62      B    C
ATOM   3266  O   GLU   501     -67.253  -7.122 -30.080  1.00 81.37      B    O
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ATOM   3267  N   ALA   502     -68.871  -6.685 -31.577  1.00 81.89      B    N
ATOM   3268  CA  ALA   502     -67.950  -6.483 -32.684  1.00 83.20      B    C
ATOM   3269  CB  ALA   502     -68.497  -7.137 -33.942  1.00 83.17      B    C
ATOM   3270  C   ALA   502     -67.739  -4.987 -32.918  1.00 84.38      B    C
ATOM   3271  O   ALA   502     -68.689  -4.202 -32.889  1.00 84.50      B    O
ATOM   3272  N   GLN   503     -66.485  -4.601 -33.133  1.00 85.34      B    N
ATOM   3273  CA  GLN   503     -66.143  -3.237 -33.521  1.00 85.73      B    C
ATOM   3274  CB  GLN   503     -65.807  -2.394 -32.291  1.00 85.79      B    C
ATOM   3275  CG  GLN   503     -66.989  -2.127 -31.379  1.00 87.34      B    C
ATOM   3276  CD  GLN   503     -66.707  -1.020 -30.381  1.00 88.20      B    C
ATOM   3277  OE1 GLN   503     -65.587  -0.508 -30.304  1.00 88.07      B    O
ATOM   3278  NE2 GLN   503     -67.723  -0.644 -29.610  1.00 88.12      B    N
ATOM   3279  C   GLN   503     -64.941  -3.268 -34.456  1.00 86.14      B    C
ATOM   3280  O   GLN   503     -63.865  -3.733 -34.081  1.00 86.49      B    O
ATOM   3281  N   GLY   504     -65.127  -2.775 -35.675  1.00 85.95      B    N
ATOM   3282  CA  GLY   504     -64.066  -2.858 -36.659  1.00 84.92      B    C
ATOM   3283  C   GLY   504     -63.668  -4.298 -36.918  1.00 84.27      B    C
ATOM   3284  O   GLY   504     -62.487  -4.601 -37.096  1.00 84.30      B    O
ATOM   3285  N   GLY   505     -64.652  -5.192 -36.929  1.00 83.46      B    N
ATOM   3286  CA  GLY   505     -64.376  -6.587 -37.221  1.00 82.44      B    C
ATOM   3287  C   GLY   505     -63.505  -7.254 -36.172  1.00 81.46      B    C
ATOM   3288  O   GLY   505     -62.900  -8.296 -36.426  1.00 81.89      B    O
ATOM   3289  N   LYS   506     -63.434  -6.645 -34.992  1.00 79.89      B    N
ATOM   3290  CA  LYS   506     -62.694  -7.214 -33.870  1.00 77.91      B    C
ATOM   3291  CB  LYS   506     -61.499  -6.320 -33.519  1.00 79.66      B    C
ATOM   3292  CG  LYS   506     -60.246  -7.075 -33.110  1.00 81.29      B    C
ATOM   3293  CD  LYS   506     -59.493  -7.584 -34.332  1.00 83.87      B    C
ATOM   3294  CE  LYS   506     -58.221  -8.327 -33.940  1.00 85.75      B    C
ATOM   3295  NZ  LYS   506     -57.438  -8.754 -35.136  1.00 86.14      B    N
ATOM   3296  C   LYS   506     -63.631  -7.314 -32.669  1.00 75.15      B    C
ATOM   3297  O   LYS   506     -64.476  -6.442 -32.465  1.00 74.81      B    O
ATOM   3298  N   LEU   507     -63.487  -8.371 -31.877  1.00 71.57      B    N
ATOM   3299  CA  LEU   507     -64.313  -8.524 -30.684  1.00 68.58      B    C
ATOM   3300  CB  LEU   507     -64.419 -10.000 -30.294  1.00 70.01      B    C
ATOM   3301  CG  LEU   507     -65.504 -10.799 -31.017  1.00 71.09      B    C
ATOM   3302  CD1 LEU   507     -65.466 -12.256 -30.572  1.00 72.08      B    C
ATOM   3303  CD2 LEU   507     -66.861 -10.184 -30.716  1.00 70.93      B    C
ATOM   3304  C   LEU   507     -63.774  -7.719 -29.505  1.00 65.55      B    C
ATOM   3305  O   LEU   507     -62.596  -7.808 -29.162  1.00 65.40      B    O
ATOM   3306  N   VAL   508     -64.647  -6.929 -28.891  1.00 62.61      B    N
ATOM   3307  CA  VAL   508     -64.284  -6.166 -27.706  1.00 60.31      B    C
ATOM   3308  CB  VAL   508     -64.402  -4.648 -27.958  1.00 59.66      B    C
ATOM   3309  CG1 VAL   508     -63.534  -4.250 -29.141  1.00 58.42      B    C
ATOM   3310  CG2 VAL   508     -65.850  -4.271 -28.199  1.00 58.70      B    C
ATOM   3311  C   VAL   508     -65.181  -6.544 -26.534  1.00 59.23      B    C
ATOM   3312  O   VAL   508     -66.215  -7.183 -26.713  1.00 58.09      B    O
ATOM   3313  N   CYS   509     -64.773  -6.149 -25.335  1.00 59.26      B    N
ATOM   3314  CA  CYS   509     -65.501  -6.483 -24.119  1.00 60.27      B    C
ATOM   3315  C   CYS   509     -66.128  -5.225 -23.534  1.00 61.97      B    C
ATOM   3316  O   CYS   509     -65.421  -4.335 -23.065  1.00 62.31      B    O
ATOM   3317  CB  CYS   509     -64.533  -7.109 -23.113  1.00 59.87      B    C
ATOM   3318  SG  CYS   509     -65.198  -7.558 -21.476  1.00 60.83      B    S
ATOM   3319  N   ARG   510     -67.455  -5.155 -23.565  1.00 63.76      B    N
ATOM   3320  CA  ARG   510     -68.173  -3.970 -23.107  1.00 65.70      B    C
ATOM   3321  CB  ARG   510     -69.146  -3.499 -24.191  1.00 67.66      B    C
ATOM   3322  CG  ARG   510     -69.977  -2.286 -23.801  1.00 71.78      B    C
ATOM   3323  CD  ARG   510     -69.457  -1.026 -24.473  1.00 76.06      B    C
ATOM   3324  NE  ARG   510     -70.306  -0.602 -25.585  1.00 79.19      B    N
ATOM   3325  CZ  ARG   510     -69.871   0.077 -26.643  1.00 81.45      B    C
ATOM   3326  NH1 ARG   510     -70.715   0.424 -27.605  1.00 82.26      B    N
ATOM   3327  NH2 ARG   510     -68.590   0.407 -26.746  1.00 81.82      B    N
ATOM   3328  C   ARG   510     -68.940  -4.240 -21.817  1.00 66.34      B    C
ATOM   3329  O   ARG   510     -69.755  -5.157 -21.751  1.00 66.22      B    O
ATOM   3330  N   ALA   511     -68.674  -3.435 -20.794  1.00 67.79      B    N
ATOM   3331  CA  ALA   511     -69.380  -3.557 -19.525  1.00 69.49      B    C
ATOM   3332  CB  ALA   511     -68.390  -3.565 -18.375  1.00 69.05      B    C
ATOM   3333  C   ALA   511     -70.366  -2.408 -19.359  1.00 72.13      B    C
ATOM   3334  O   ALA   511     -70.060  -1.260 -19.685  1.00 71.53      B    O
ATOM   3335  N   HIS   512     -71.552  -2.725 -18.852  1.00 75.10      B    N
ATOM   3336  CA  HIS   512     -72.610  -1.734 -18.709  1.00 77.76      B    C
ATOM   3337  CB  HIS   512     -73.915  -2.276 -19.305  1.00 79.16      B    C
ATOM   3338  CG  HIS   512     -73.832  -2.568 -20.773  1.00 80.99      B    C
ATOM   3339  CD2 HIS   512     -73.653  -3.732 -21.442  1.00 81.47      B    C
ATOM   3340  ND1 HIS   512     -73.926  -1.584 -21.735  1.00 81.65      B    N
ATOM   3341  CE1 HIS   512     -73.807  -2.130 -22.933  1.00 81.85      B    C
ATOM   3342  NE2 HIS   512     -73.640  -3.431 -22.783  1.00 81.72      B    N
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ATOM   3343  C   HIS   512     -72.814  -1.370 -17.244  1.00 78.56      B    C
ATOM   3344  O   HIS   512     -72.797  -2.238 -16.371  1.00 77.69      B    O
ATOM   3345  N   ASN   513     -73.006  -0.081 -16.981  1.00 80.56      B    N
ATOM   3346  CA  ASN   513     -73.163   0.401 -15.613  1.00 83.31      B    C
ATOM   3347  CB  ASN   513     -72.626   1.831 -15.495  1.00 82.08      B    C
ATOM   3348  CG  ASN   513     -72.534   2.302 -14.054  1.00 81.68      B    C
ATOM   3349  OD1 ASN   513     -72.666   1.510 -13.120  1.00 81.74      B    O
ATOM   3350  ND2 ASN   513     -72.304   3.597 -13.867  1.00 80.52      B    N
ATOM   3351  C   ASN   513     -74.626   0.363 -15.172  1.00 85.41      B    C
ATOM   3352  O   ASN   513     -75.534   0.530 -15.987  1.00 85.81      B    O
ATOM   3353  N   ALA   514     -74.847   0.140 -13.880  1.00 87.99      B    N
ATOM   3354  CA  ALA   514     -76.188   0.207 -13.311  1.00 91.44      B    C
ATOM   3355  CB  ALA   514     -76.222  -0.503 -11.962  1.00 90.86      B    C
ATOM   3356  C   ALA   514     -76.608   1.666 -13.149  1.00 94.10      B    C
ATOM   3357  O   ALA   514     -75.762   2.559 -13.074  1.00 94.52      B    O
ATOM   3358  N   PHE   515     -77.916   1.905 -13.094  1.00 96.76      B    N
ATOM   3359  CA  PHE   515     -78.440   3.265 -13.033  1.00 98.60      B    C
ATOM   3360  CB  PHE   515     -79.951   3.262 -13.296  1.00101.08      B    C
ATOM   3361  CG  PHE   515     -80.327   2.774 -14.671  1.00103.86      B    C
ATOM   3362  CD1 PHE   515     -81.351   1.853 -14.840  1.00104.87      B    C
ATOM   3363  CD2 PHE   515     -79.658   3.237 -15.795  1.00104.65      B    C
ATOM   3364  CE1 PHE   515     -81.701   1.400 -16.103  1.00105.30      B    C
ATOM   3365  CE2 PHE   515     -80.003   2.789 -17.061  1.00105.48      B    C
ATOM   3366  CZ  PHE   515     -81.026   1.869 -17.215  1.00105.53      B    C
ATOM   3367  C   PHE   515     -78.147   3.936 -11.692  1.00 98.36      B    C
ATOM   3368  O   PHE   515     -78.217   5.160 -11.576  1.00 98.94      B    O
ATOM   3369  N   GLY   516     -77.816   3.135 -10.684  1.00 97.52      B    N
ATOM   3370  CA  GLY   516     -77.447   3.691  -9.394  1.00 96.59      B    C
ATOM   3371  C   GLY   516     -75.972   3.529  -9.061  1.00 96.24      B    C
ATOM   3372  O   GLY   516     -75.559   3.767  -7.925  1.00 96.40      B    O
ATOM   3373  N   GLY   517     -75.175   3.130 -10.049  1.00 95.19      B    N
ATOM   3374  CA  GLY   517     -73.790   2.774  -9.787  1.00 92.79      B    C
ATOM   3375  C   GLY   517     -72.776   3.864 -10.079  1.00 91.22      B    C
ATOM   3376  O   GLY   517     -73.064   4.826 -10.794  1.00 91.57      B    O
ATOM   3377  N   GLU   518     -71.577   3.701  -9.525  1.00 89.22      B    N
ATOM   3378  CA  GLU   518     -70.512   4.693  -9.645  1.00 86.83      B    C
ATOM   3379  CB  GLU   518     -69.724   4.773  -8.334  1.00 89.07      B    C
ATOM   3380  CG  GLU   518     -69.853   3.538  -7.443  1.00 92.53      B    C
ATOM   3381  CD  GLU   518     -69.338   2.270  -8.105  1.00 94.95      B    C
ATOM   3382  OE1 GLU   518     -68.149   1.936  -7.912  1.00 96.07      B    O
ATOM   3383  OE2 GLU   518     -70.124   1.603  -8.813  1.00 96.67      B    O
ATOM   3384  C   GLU   518     -69.557   4.398 -10.798  1.00 83.45      B    C
ATOM   3385  O   GLU   518     -68.691   5.213 -11.122  1.00 83.02      B    O
ATOM   3386  N   GLY   519     -69.717   3.231 -11.413  1.00 79.54      B    N
ATOM   3387  CA  GLY   519     -68.872   2.864 -12.536  1.00 73.49      B    C
ATOM   3388  C   GLY   519     -68.469   1.401 -12.522  1.00 69.03      B    C
ATOM   3389  O   GLY   519     -68.432   0.761 -11.468  1.00 68.16      B    O
ATOM   3390  N   VAL   520     -68.164   0.868 -13.701  1.00 64.49      B    N
ATOM   3391  CA  VAL   520     -67.812  -0.540 -13.838  1.00 60.24      B    C
ATOM   3392  CB  VAL   520     -68.924  -1.328 -14.570  1.00 59.70      B    C
ATOM   3393  CG1 VAL   520     -70.216  -1.262 -13.780  1.00 60.31      B    C
ATOM   3394  CG2 VAL   520     -69.128  -0.761 -15.968  1.00 58.45      B    C
ATOM   3395  C   VAL   520     -66.525  -0.699 -14.632  1.00 57.65      B    C
ATOM   3396  O   VAL   520     -66.190   0.146 -15.462  1.00 55.74      B    O
ATOM   3397  N   TYR   521     -65.806  -1.786 -14.376  1.00 55.08      B    N
ATOM   3398  CA  TYR   521     -64.711  -2.180 -15.252  1.00 53.22      B    C
ATOM   3399  CB  TYR   521     -63.522  -2.693 -14.438  1.00 52.94      B    C
ATOM   3400  CG  TYR   521     -62.891  -1.659 -13.537  1.00 53.88      B    C
ATOM   3401  CD1 TYR   521     -63.254  -1.566 -12.200  1.00 54.58      B    C
ATOM   3402  CE1 TYR   521     -62.667  -0.639 -11.362  1.00 55.31      B    C
ATOM   3403  CD2 TYR   521     -61.919  -0.790 -14.016  1.00 53.24      B    C
ATOM   3404  CE2 TYR   521     -61.326   0.140 -13.185  1.00 54.89      B    C
ATOM   3405  CZ  TYR   521     -61.704   0.210 -11.859  1.00 55.53      B    C
ATOM   3406  OH  TYR   521     -61.120   1.134 -11.021  1.00 57.45      B    O
ATOM   3407  C   TYR   521     -65.161  -3.272 -16.215  1.00 51.73      B    C
ATOM   3408  O   TYR   521     -65.941  -4.155 -15.853  1.00 51.92      B    O
ATOM   3409  N   ALA   522     -64.671  -3.201 -17.446  1.00 49.79      B    N
ATOM   3410  CA  ALA   522     -64.726  -4.338 -18.350  1.00 48.15      B    C
ATOM   3411  CB  ALA   522     -64.927  -3.866 -19.782  1.00 47.08      B    C
ATOM   3412  C   ALA   522     -63.401  -5.076 -18.220  1.00 48.00      B    C
ATOM   3413  O   ALA   522     -62.348  -4.451 -18.090  1.00 48.65      B    O
ATOM   3414  N   ILE   523     -63.456  -6.403 -18.240  1.00 45.80      B    N
ATOM   3415  CA  ILE   523     -62.257  -7.208 -18.080  1.00 43.99      B    C
ATOM   3416  CB  ILE   523     -62.240  -7.891 -16.715  1.00 43.33      B    C
ATOM   3417  CG2 ILE   523     -60.937  -8.642 -16.529  1.00 42.17      B    C
ATOM   3418  CG1 ILE   523     -62.406  -6.837 -15.618  1.00 43.33      B    C
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ATOM   3419  CD1 ILE   523     -62.845  -7.401 -14.295  1.00 41.92      B    C
ATOM   3420  C   ILE   523     -62.187  -8.267 -19.165  1.00 44.59      B    C
ATOM   3421  O   ILE   523     -63.005  -9.190 -19.209  1.00 46.06      B    O
ATOM   3422  N   ALA   524     -61.207  -8.127 -20.048  1.00 42.53      B    N
ATOM   3423  CA  ALA   524     -61.078  -9.025 -21.179  1.00 41.89      B    C
ATOM   3424  CB  ALA   524     -60.713  -8.238 -22.431  1.00 41.27      B    C
ATOM   3425  C   ALA   524     -60.024 -10.080 -20.898  1.00 41.28      B    C
ATOM   3426  O   ALA   524     -59.078  -9.851 -20.150  1.00 41.18      B    O
ATOM   3427  N   ARG   525     -60.200 -11.247 -21.497  1.00 41.36      B    N
ATOM   3428  CA  ARG   525     -59.173 -12.270 -21.451  1.00 41.15      B    C
ATOM   3429  CB  ARG   525     -59.781 -13.570 -20.924  1.00 40.18      B    C
ATOM   3430  CG  ARG   525     -58.773 -14.635 -20.566  1.00 39.48      B    C
ATOM   3431  CD  ARG   525     -58.041 -14.338 -19.268  1.00 37.58      B    C
ATOM   3432  NE  ARG   525     -57.191 -15.473 -18.924  1.00 37.63      B    N
ATOM   3433  CZ  ARG   525     -56.069 -15.401 -18.221  1.00 38.00      B    C
ATOM   3434  NH1 ARG   525     -55.376 -16.508 -17.975  1.00 35.82      B    N
ATOM   3435  NH2 ARG   525     -55.643 -14.230 -17.761  1.00 37.77      B    N
ATOM   3436  C   ARG   525     -58.628 -12.439 -22.869  1.00 40.98      B    C
ATOM   3437  O   ARG   525     -59.364 -12.790 -23.787  1.00 41.72      B    O
ATOM   3438  N   CYS   526     -57.342 -12.163 -23.050  1.00 41.85      B    N
ATOM   3439  CA  CYS   526     -56.764 -12.090 -24.387  1.00 42.79      B    C
ATOM   3440  C   CYS   526     -55.720 -13.167 -24.581  1.00 42.97      B    C
ATOM   3441  O   CYS   526     -54.816 -13.322 -23.761  1.00 44.19      B    O
ATOM   3442  CB  CYS   526     -56.121 -10.723 -24.615  1.00 45.96      B    C
ATOM   3443  SG  CYS   526     -57.256  -9.311 -24.431  1.00 49.70      B    S
ATOM   3444  N   CYS   527     -55.837 -13.912 -25.674  1.00 43.71      B    N
ATOM   3445  CA  CYS   527     -55.014 -15.099 -25.851  1.00 43.31      B    C
ATOM   3446  C   CYS   527     -54.445 -15.210 -27.257  1.00 43.72      B    C
ATOM   3447  O   CYS   527     -55.045 -14.739 -28.226  1.00 41.42      B    O
ATOM   3448  CB  CYS   527     -55.830 -16.351 -25.559  1.00 42.73      B    C
ATOM   3449  SG  CYS   527     -56.857 -16.347 -24.051  1.00 43.67      B    S
ATOM   3450  N   LEU   528     -53.287 -15.852 -27.355  1.00 46.11      B    N
ATOM   3451  CA  LEU   528     -52.702 -16.187 -28.644  1.00 49.34      B    C
ATOM   3452  CB  LEU   528     -51.176 -16.118 -28.565  1.00 49.97      B    C
ATOM   3453  CG  LEU   528     -50.603 -14.699 -28.532  1.00 51.33      B    C
ATOM   3454  CD1 LEU   528     -49.103 -14.751 -28.316  1.00 51.51      B    C
ATOM   3455  CD2 LEU   528     -50.934 -13.991 -29.840  1.00 50.91      B    C
ATOM   3456  C   LEU   528     -53.145 -17.583 -29.064  1.00 51.31      B    C
ATOM   3457  O   LEU   528     -52.695 -18.589 -28.511  1.00 51.03      B    O
ATOM   3458  N   LEU   529     -54.042 -17.622 -30.043  1.00 52.37      B    N
ATOM   3459  CA  LEU   529     -54.606 -18.865 -30.548  1.00 53.39      B    C
ATOM   3460  CB  LEU   529     -56.102 -18.934 -30.230  1.00 53.20      B    C
ATOM   3461  CG  LEU   529     -56.625 -20.120 -29.423  1.00 52.77      B    C
ATOM   3462  CD1 LEU   529     -58.118 -20.235 -29.646  1.00 52.41      B    C
ATOM   3463  CD2 LEU   529     -55.929 -21.402 -29.849  1.00 53.54      B    C
ATOM   3464  C   LEU   529     -54.418 -18.876 -32.057  1.00 54.80      B    C
ATOM   3465  O   LEU   529     -55.236 -18.328 -32.799  1.00 53.85      B    O
ATOM   3466  N   PRO   530     -53.332 -19.495 -32.532  1.00 56.84      B    N
ATOM   3467  CD  PRO   530     -52.292 -20.195 -31.760  1.00 57.17      B    C
ATOM   3468  CA  PRO   530     -53.078 -19.522 -33.976  1.00 58.95      B    C
ATOM   3469  CB  PRO   530     -51.726 -20.233 -34.096  1.00 58.96      B    C
ATOM   3470  CG  PRO   530     -51.557 -20.980 -32.809  1.00 58.65      B    C
ATOM   3471  C   PRO   530     -54.184 -20.219 -34.772  1.00 60.63      B    C
ATOM   3472  O   PRO   530     -54.712 -21.253 -34.353  1.00 59.30      B    O
ATOM   3473  N   GLN   531     -54.538 -19.623 -35.909  1.00 62.90      B    N
ATOM   3474  CA  GLN   531     -55.518 -20.193 -36.832  1.00 65.75      B    C
ATOM   3475  CB  GLN   531     -54.988 -21.495 -37.431  1.00 67.57      B    C
ATOM   3476  CG  GLN   531     -53.804 -21.301 -38.356  1.00 72.19      B    C
ATOM   3477  CD  GLN   531     -52.752 -22.372 -38.173  1.00 75.19      B    C
ATOM   3478  OE1 GLN   531     -53.063 -23.506 -37.801  1.00 76.85      B    O
ATOM   3479  NE2 GLN   531     -51.496 -22.019 -38.429  1.00 76.74      B    N
ATOM   3480  C   GLN   531     -56.863 -20.449 -36.175  1.00 65.84      B    C
ATOM   3481  O   GLN   531     -57.506 -21.465 -36.427  1.00 66.30      B    O
ATOM   3482  N   ALA   532     -57.288 -19.521 -35.330  1.00 66.37      B    N
ATOM   3483  CA  ALA   532     -58.562 -19.657 -34.652  1.00 66.44      B    C
ATOM   3484  CB  ALA   532     -58.439 -19.188 -33.211  1.00 66.93      B    C
ATOM   3485  C   ALA   532     -59.632 -18.856 -35.373  1.00 66.62      B    C
ATOM   3486  O   ALA   532     -59.369 -17.771 -35.891  1.00 67.32      B    O
ATOM   3487  N   ALA   533     -60.840 -19.404 -35.407  1.00 66.62      B    N
ATOM   3488  CA  ALA   533     -61.998 -18.674 -35.893  1.00 66.37      B    C
ATOM   3489  CB  ALA   533     -62.599 -19.385 -37.101  1.00 65.70      B    C
ATOM   3490  C   ALA   533     -63.017 -18.593 -34.763  1.00 66.18      B    C
ATOM   3491  O   ALA   533     -63.818 -19.510 -34.563  1.00 66.80      B    O
ATOM   3492  N   CYS   534     -62.975 -17.495 -34.020  1.00 65.19      B    N
ATOM   3493  CA  CYS   534     -63.886 -17.309 -32.903  1.00 64.70      B    C
ATOM   3494  C   CYS   534     -65.066 -16.439 -33.307  1.00 64.08      B    C
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ATOM   3495  O   CYS   534      -65.030 -15.764 -34.333  1.00 63.92      B    O
ATOM   3496  CB  CYS   534      -63.164 -16.654 -31.733  1.00 64.32      B    C
ATOM   3497  SG  CYS   534      -61.664 -17.496 -31.140  1.00 66.91      B    S
ATOM   3498  N   SER   535      -66.107 -16.458 -32.482  1.00 64.06      B    N
ATOM   3499  CA  SER   535      -67.332 -15.722 -32.756  1.00 64.37      B    C
ATOM   3500  CB  SER   535      -68.104 -16.394 -33.894  1.00 65.10      B    C
ATOM   3501  OG  SER   535      -68.461 -17.724 -33.551  1.00 67.16      B    O
ATOM   3502  C   SER   535      -68.192 -15.695 -31.500  1.00 64.34      B    C
ATOM   3503  O   SER   535      -67.978 -16.480 -30.578  1.00 64.67      B    O
ATOM   3504  N   VAL   536      -69.162 -14.789 -31.467  1.00 64.90      B    N
ATOM   3505  CA  VAL   536      -70.068 -14.687 -30.331  1.00 65.96      B    C
ATOM   3506  CB  VAL   536      -70.133 -13.241 -29.791  1.00 65.53      B    C
ATOM   3507  CG1 VAL   536      -71.068 -13.175 -28.594  1.00 64.39      B    C
ATOM   3508  CG2 VAL   536      -68.743 -12.769 -29.405  1.00 65.88      B    C
ATOM   3509  C   VAL   536      -71.471 -15.116 -30.738  1.00 67.18      B    C
ATOM   3510  O   VAL   536      -71.923 -14.820 -31.843  1.00 65.81      B    O
ATOM   3511  N   HIS   537      -72.153 -15.818 -29.840  1.00 69.33      B    N
ATOM   3512  CA  HIS   537      -73.527 -16.238 -30.076  1.00 72.07      B    C
ATOM   3513  CB  HIS   537      -73.586 -17.754 -30.277  1.00 73.31      B    C
ATOM   3514  CG  HIS   537      -72.754 -18.240 -31.423  1.00 75.71      B    C
ATOM   3515  CD2 HIS   537      -71.437 -18.549 -31.502  1.00 76.61      B    C
ATOM   3516  ND1 HIS   537      -73.269 -18.438 -32.686  1.00 76.54      B    N
ATOM   3517  CE1 HIS   537      -72.306 -18.847 -33.494  1.00 77.41      B    C
ATOM   3518  NE2 HIS   537      -71.184 -18.922 -32.800  1.00 78.04      B    N
ATOM   3519  C   HIS   537      -74.395 -15.831 -28.894  1.00 73.31      B    C
ATOM   3520  O   HIS   537      -74.074 -16.135 -27.745  1.00 73.15      B    O
ATOM   3521  N   THR   538      -75.493 -15.140 -29.182  1.00 75.42      B    N
ATOM   3522  CA  THR   538      -76.318 -14.538 -28.141  1.00 77.29      B    C
ATOM   3523  CB  THR   538      -76.397 -13.005 -28.311  1.00 77.11      B    C
ATOM   3524  OG1 THR   538      -75.077 -12.447 -28.274  1.00 76.83      B    O
ATOM   3525  CG2 THR   538      -77.238 -12.389 -27.203  1.00 76.60      B    C
ATOM   3526  C   THR   538      -77.740 -15.086 -28.151  1.00 79.06      B    C
ATOM   3527  O   THR   538      -78.284 -15.411 -29.207  1.00 78.65      B    O
ATOM   3528  N   ALA   539      -78.335 -15.186 -26.968  1.00 80.99      B    N
ATOM   3529  CA  ALA   539      -79.752 -15.495 -26.845  1.00 83.77      B    C
ATOM   3530  CB  ALA   539      -79.933 -16.889 -26.265  1.00 83.09      B    C
ATOM   3531  C   ALA   539      -80.416 -14.461 -25.944  1.00 86.16      B    C
ATOM   3532  O   ALA   539      -79.932 -14.177 -24.850  1.00 86.73      B    O
ATOM   3533  N   PRO   540      -81.537 -13.880 -26.396  1.00 88.31      B    N
ATOM   3534  CD  PRO   540      -82.164 -14.122 -27.707  1.00 88.43      B    C
ATOM   3535  CA  PRO   540      -82.293 -12.912 -25.592  1.00 90.15      B    C
ATOM   3536  CB  PRO   540      -83.360 -12.399 -26.556  1.00 89.67      B    C
ATOM   3537  CG  PRO   540      -83.517 -13.493 -27.559  1.00 89.11      B    C
ATOM   3538  C   PRO   540      -82.898 -13.553 -24.344  1.00 92.40      B    C
ATOM   3539  O   PRO   540      -82.934 -14.776 -24.219  1.00 91.96      B    O
ATOM   3540  N   PRO   541      -83.380 -12.729 -23.400  1.00 94.77      B    N
ATOM   3541  CD  PRO   541      -83.368 -11.257 -23.433  1.00 94.86      B    C
ATOM   3542  CA  PRO   541      -83.932 -13.243 -22.141  1.00 97.44      B    C
ATOM   3543  CB  PRO   541      -84.361 -11.980 -21.393  1.00 96.46      B    C
ATOM   3544  CG  PRO   541      -83.528 -10.892 -21.986  1.00 95.58      B    C
ATOM   3545  C   PRO   541      -85.103 -14.200 -22.362  1.00100.50      B    C
ATOM   3546  O   PRO   541      -85.968 -13.950 -23.201  1.00100.57      B    O
ATOM   3547  N   ALA   542      -85.120 -15.293 -21.604  1.00104.26      B    N
ATOM   3548  CA  ALA   542      -86.190 -16.280 -21.700  1.00107.63      B    C
ATOM   3549  CB  ALA   542      -85.685 -17.646 -21.250  1.00107.30      B    C
ATOM   3550  C   ALA   542      -87.377 -15.855 -20.843  1.00110.11      B    C
ATOM   3551  O   ALA   542      -88.513 -15.808 -21.316  1.00110.36      B    O
ATOM   3552  N   GLU   543      -87.100 -15.550 -19.578  1.00113.18      B    N
ATOM   3553  CA  GLU   543      -88.102 -15.008 -18.666  1.00116.02      B    C
ATOM   3554  CB  GLU   543      -88.709 -13.731 -19.254  1.00116.65      B    C
ATOM   3555  CG  GLU   543      -89.515 -12.911 -18.263  1.00118.13      B    C
ATOM   3556  CD  GLU   543      -89.438 -11.425 -18.547  1.00118.89      B    C
ATOM   3557  OE1 GLU   543      -90.443 -10.718 -18.316  1.00119.23      B    O
ATOM   3558  OE2 GLU   543      -88.369 -10.961 -19.002  1.00118.98      B    O
ATOM   3559  C   GLU   543      -89.202 -16.025 -18.376  1.00117.48      B    C
ATOM   3560  O   GLU   543      -89.605 -16.788 -19.258  1.00117.72      B    O
ATOM   3561  N   ALA   544      -89.682 -16.033 -17.134  1.00118.85      B    N
ATOM   3562  CA  ALA   544      -90.647 -17.034 -16.688  1.00120.01      B    C
ATOM   3563  CB  ALA   544      -91.991 -16.816 -17.382  1.00119.80      B    C
ATOM   3564  C   ALA   544      -90.118 -18.437 -16.987  1.00120.71      B    C
ATOM   3565  O   ALA   544      -90.876 -19.410 -17.014  1.00121.08      B    O
ATOM   3566  N   SER   545      -88.810 -18.526 -17.212  1.00120.84      B    N
ATOM   3567  CA  SER   545      -88.169 -19.770 -17.617  1.00120.61      B    C
ATOM   3568  CB  SER   545      -87.431 -19.561 -18.942  1.00120.62      B    C
ATOM   3569  OG  SER   545      -86.831 -20.762 -19.392  1.00121.09      B    O
ATOM   3570  C   SER   545      -87.189 -20.247 -16.548  1.00120.42      B    C
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ATOM   3571  O   SER   545     -87.011 -19.591 -15.522  1.00120.46      B    O
ATOM   3572  N   MET   546     -86.559 -21.394 -16.789  1.00120.05      B    N
ATOM   3573  CA  MET   546     -85.549 -21.918 -15.875  1.00119.53      B    C
ATOM   3574  CB  MET   546     -85.530 -23.451 -15.921  1.00120.98      B    C
ATOM   3575  CG  MET   546     -84.814 -24.046 -17.132  1.00122.54      B    C
ATOM   3576  SD  MET   546     -85.634 -23.714 -18.707  1.00124.63      B    S
ATOM   3577  CE  MET   546     -84.540 -24.571 -19.851  1.00124.00      B    C
ATOM   3578  C   MET   546     -84.161 -21.374 -16.225  1.00118.19      B    C
ATOM   3579  O   MET   546     -83.141 -21.923 -15.803  1.00118.60      B    O
ATOM   3580  N   GLY   547     -84.131 -20.294 -17.001  1.00115.77      B    N
ATOM   3581  CA  GLY   547     -82.868 -19.668 -17.351  1.00112.18      B    C
ATOM   3582  C   GLY   547     -82.687 -19.464 -18.842  1.00109.64      B    C
ATOM   3583  O   GLY   547     -83.268 -20.186 -19.654  1.00109.67      B    O
ATOM   3584  N   THR   548     -81.879 -18.473 -19.205  1.00106.80      B    N
ATOM   3585  CA  THR   548     -81.561 -18.211 -20.604  1.00103.45      B    C
ATOM   3586  CB  THR   548     -81.332 -16.709 -20.848  1.00102.95      B    C
ATOM   3587  OG1 THR   548     -82.486 -15.973 -20.422  1.00102.38      B    O
ATOM   3588  CG2 THR   548     -81.089 -16.441 -22.322  1.00102.67      B    C
ATOM   3589  C   THR   548     -80.296 -18.974 -20.989  1.00101.35      B    C
ATOM   3590  O   THR   548     -79.298 -18.932 -20.270  1.00101.40      B    O
ATOM   3591  N   ARG   549     -80.342 -19.671 -22.120  1.00 98.30      B    N
ATOM   3592  CA  ARG   549     -79.255 -20.565 -22.504  1.00 95.33      B    C
ATOM   3593  CB  ARG   549     -79.680 -22.022 -22.300  1.00 97.27      B    C
ATOM   3594  CG  ARG   549     -80.069 -22.352 -20.871  1.00 99.72      B    C
ATOM   3595  CD  ARG   549     -80.915 -23.613 -20.793  1.00101.92      B    C
ATOM   3596  NE  ARG   549     -81.482 -23.787 -19.459  1.00104.40      B    N
ATOM   3597  CZ  ARG   549     -80.888 -24.457 -18.475  1.00105.40      B    C
ATOM   3598  NH1 ARG   549     -81.478 -24.562 -17.289  1.00105.68      B    N
ATOM   3599  NH2 ARG   549     -79.707 -25.026 -18.677  1.00105.41      B    N
ATOM   3600  C   ARG   549     -78.808 -20.370 -23.946  1.00 92.19      B    C
ATOM   3601  O   ARG   549     -79.616 -20.090 -24.828  1.00 91.75      B    O
ATOM   3602  N   VAL   550     -77.509 -20.522 -24.174  1.00 88.72      B    N
ATOM   3603  CA  VAL   550     -76.959 -20.534 -25.520  1.00 85.99      B    C
ATOM   3604  CB  VAL   550     -76.520 -19.120 -25.963  1.00 85.94      B    C
ATOM   3605  CG1 VAL   550     -75.387 -18.624 -25.080  1.00 85.93      B    C
ATOM   3606  CG2 VAL   550     -76.093 -19.138 -27.420  1.00 85.60      B    C
ATOM   3607  C   VAL   550     -75.751 -21.461 -25.532  1.00 84.16      B    C
ATOM   3608  O   VAL   550     -75.046 -21.584 -24.532  1.00 83.76      B    O
ATOM   3609  N   HIS   551     -75.522 -22.127 -26.657  1.00 82.33      B    N
ATOM   3610  CA  HIS   551     -74.368 -23.001 -26.788  1.00 81.02      B    C
ATOM   3611  CB  HIS   551     -74.732 -24.438 -26.390  1.00 83.78      B    C
ATOM   3612  CG  HIS   551     -75.882 -25.015 -27.158  1.00 86.60      B    C
ATOM   3613  CD2 HIS   551     -75.968 -25.468 -28.431  1.00 87.05      B    C
ATOM   3614  ND1 HIS   551     -77.129 -25.203 -26.600  1.00 87.85      B    N
ATOM   3615  CE1 HIS   551     -77.933 -25.747 -27.496  1.00 88.26      B    C
ATOM   3616  NE2 HIS   551     -77.253 -25.919 -28.615  1.00 88.32      B    N
ATOM   3617  C   HIS   551     -73.800 -22.976 -28.198  1.00 78.87      B    C
ATOM   3618  O   HIS   551     -74.450 -22.512 -29.135  1.00 78.95      B    O
ATOM   3619  N   CYS   552     -72.575 -23.469 -28.334  1.00 76.26      B    N
ATOM   3620  CA  CYS   552     -71.885 -23.474 -29.612  1.00 74.68      B    C
ATOM   3621  C   CYS   552     -72.362 -24.649 -30.456  1.00 76.00      B    C
ATOM   3622  O   CYS   552     -71.934 -25.786 -30.253  1.00 75.80      B    O
ATOM   3623  CB  CYS   552     -70.375 -23.572 -29.387  1.00 71.57      B    C
ATOM   3624  SG  CYS   552     -69.677 -22.320 -28.252  1.00 67.04      B    S
ATOM   3625  N   HIS   553     -73.247 -24.363 -31.406  1.00 77.76      B    N
ATOM   3626  CA  HIS   553     -73.889 -25.399 -32.212  1.00 79.66      B    C
ATOM   3627  CB  HIS   553     -75.055 -24.803 -33.013  1.00 84.15      B    C
ATOM   3628  CG  HIS   553     -76.263 -24.472 -32.188  1.00 88.61      B    C
ATOM   3629  CD2 HIS   553     -76.626 -23.332 -31.553  1.00 90.41      B    C
ATOM   3630  ND1 HIS   553     -77.290 -25.369 -31.981  1.00 90.68      B    N
ATOM   3631  CE1 HIS   553     -78.234 -24.795 -31.256  1.00 91.59      B    C
ATOM   3632  NE2 HIS   553     -77.857 -23.558 -30.983  1.00 91.84      B    N
ATOM   3633  C   HIS   553     -72.910 -26.066 -33.177  1.00 78.29      B    C
ATOM   3634  O   HIS   553     -72.901 -27.289 -33.317  1.00 78.79      B    O
ATOM   3635  N   GLN   554     -72.091 -25.257 -33.841  1.00 75.87      B    N
ATOM   3636  CA  GLN   554     -71.197 -25.755 -34.878  1.00 73.89      B    C
ATOM   3637  CB  GLN   554     -70.435 -24.592 -35.516  1.00 76.44      B    C
ATOM   3638  CG  GLN   554     -71.323 -23.528 -36.140  1.00 80.50      B    C
ATOM   3639  CD  GLN   554     -70.578 -22.230 -36.395  1.00 83.46      B    C
ATOM   3640  OE1 GLN   554     -70.183 -21.937 -37.527  1.00 83.91      B    O
ATOM   3641  NE2 GLN   554     -70.376 -21.445 -35.337  1.00 84.48      B    N
ATOM   3642  C   GLN   554     -70.204 -26.781 -34.340  1.00 71.10      B    C
ATOM   3643  O   GLN   554     -69.724 -26.668 -33.212  1.00 70.66      B    O
ATOM   3644  N   GLN   555     -69.900 -27.781 -35.161  1.00 67.93      B    N
ATOM   3645  CA  GLN   555     -68.960 -28.829 -34.792  1.00 65.48      B    C
ATOM   3646  CB  GLN   555     -69.080 -30.006 -35.762  1.00 66.77      B    C
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ATOM   3647  CG  GLN   555     -70.449 -30.677 -35.766  1.00 68.17      B    C
ATOM   3648  CD  GLN   555     -70.635 -31.626 -34.596  1.00 69.56      B    C
ATOM   3649  OE1 GLN   555     -70.909 -31.202 -33.472  1.00 68.69      B    O
ATOM   3650  NE2 GLN   555     -70.483 -32.919 -34.857  1.00 70.20      B    N
ATOM   3651  C   GLN   555     -67.535 -28.290 -34.818  1.00 63.77      B    C
ATOM   3652  O   GLN   555     -67.166 -27.537 -35.718  1.00 63.08      B    O
ATOM   3653  N   GLY   556     -66.737 -28.678 -33.828  1.00 61.44      B    N
ATOM   3654  CA  GLY   556     -65.364 -28.211 -33.765  1.00 58.50      B    C
ATOM   3655  C   GLY   556     -65.237 -26.820 -33.169  1.00 56.70      B    C
ATOM   3656  O   GLY   556     -64.138 -26.277 -33.072  1.00 56.59      B    O
ATOM   3657  N   HIS   557     -66.363 -26.238 -32.775  1.00 54.74      B    N
ATOM   3658  CA  HIS   557     -66.359 -24.945 -32.104  1.00 54.39      B    C
ATOM   3659  CB  HIS   557     -67.488 -24.066 -32.654  1.00 56.06      B    C
ATOM   3660  CG  HIS   557     -67.257 -23.603 -34.059  1.00 59.40      B    C
ATOM   3661  CD2 HIS   557     -67.399 -22.383 -34.631  1.00 60.00      B    C
ATOM   3662  ND1 HIS   557     -66.794 -24.440 -35.052  1.00 60.87      B    N
ATOM   3663  CE1 HIS   557     -66.658 -23.756 -36.175  1.00 60.41      B    C
ATOM   3664  NE2 HIS   557     -67.018 -22.506 -35.946  1.00 60.64      B    N
ATOM   3665  C   HIS   557     -66.517 -25.126 -30.597  1.00 52.41      B    C
ATOM   3666  O   HIS   557     -67.488 -25.718 -30.129  1.00 52.00      B    O
ATOM   3667  N   VAL   558     -65.551 -24.610 -29.843  1.00 50.33      B    N
ATOM   3668  CA  VAL   558     -65.494 -24.841 -28.408  1.00 48.46      B    C
ATOM   3669  CB  VAL   558     -64.078 -25.271 -27.989  1.00 48.10      B    C
ATOM   3670  CG1 VAL   558     -64.079 -25.737 -26.546  1.00 48.76      B    C
ATOM   3671  CG2 VAL   558     -63.581 -26.372 -28.913  1.00 47.38      B    C
ATOM   3672  C   VAL   558     -65.884 -23.582 -27.642  1.00 47.50      B    C
ATOM   3673  O   VAL   558     -65.607 -22.468 -28.080  1.00 48.38      B    O
ATOM   3674  N   LEU   559     -66.536 -23.761 -26.499  1.00 46.06      B    N
ATOM   3675  CA  LEU   559     -66.947 -22.632 -25.674  1.00 45.93      B    C
ATOM   3676  CB  LEU   559     -68.119 -23.041 -24.782  1.00 45.03      B    C
ATOM   3677  CG  LEU   559     -68.664 -21.975 -23.833  1.00 47.58      B    C
ATOM   3678  CD1 LEU   559     -69.353 -20.881 -24.635  1.00 45.95      B    C
ATOM   3679  CD2 LEU   559     -69.639 -22.617 -22.847  1.00 46.31      B    C
ATOM   3680  C   LEU   559     -65.777 -22.167 -24.810  1.00 45.32      B    C
ATOM   3681  O   LEU   559     -65.271 -22.923 -23.988  1.00 46.56      B    O
ATOM   3682  N   THR   560     -65.342 -20.926 -24.999  1.00 44.72      B    N
ATOM   3683  CA  THR   560     -64.186 -20.413 -24.267  1.00 43.84      B    C
ATOM   3684  CB  THR   560     -63.195 -19.709 -25.204  1.00 42.82      B    C
ATOM   3685  OG1 THR   560     -63.826 -18.565 -25.792  1.00 42.05      B    O
ATOM   3686  CG2 THR   560     -62.746 -20.654 -26.302  1.00 42.95      B    C
ATOM   3687  C   THR   560     -64.574 -19.433 -23.167  1.00 43.79      B    C
ATOM   3688  O   THR   560     -63.807 -19.219 -22.231  1.00 44.66      B    O
ATOM   3689  N   GLY   561     -65.757 -18.834 -23.281  1.00 44.15      B    N
ATOM   3690  CA  GLY   561     -66.217 -17.908 -22.260  1.00 45.65      B    C
ATOM   3691  C   GLY   561     -67.688 -17.546 -22.363  1.00 48.91      B    C
ATOM   3692  O   GLY   561     -68.264 -17.559 -23.452  1.00 48.94      B    O
ATOM   3693  N   CYS   562     -68.296 -17.223 -21.223  1.00 52.04      B    N
ATOM   3694  CA  CYS   562     -69.694 -16.790 -21.173  1.00 56.94      B    C
ATOM   3695  C   CYS   562     -69.821 -15.372 -20.622  1.00 57.36      B    C
ATOM   3696  O   CYS   562     -69.176 -15.019 -19.638  1.00 57.14      B    O
ATOM   3697  CB  CYS   562     -70.525 -17.726 -20.286  1.00 60.25      B    C
ATOM   3698  SG  CYS   562     -70.658 -19.459 -20.842  1.00 68.25      B    S
ATOM   3699  N   SER   563     -70.665 -14.566 -21.254  1.00 59.16      B    N
ATOM   3700  CA  SER   563     -70.980 -13.238 -20.743  1.00 60.40      B    C
ATOM   3701  CB  SER   563     -70.453 -12.167 -21.697  1.00 59.60      B    C
ATOM   3702  OG  SER   563     -69.037 -12.162 -21.714  1.00 60.14      B    O
ATOM   3703  C   SER   563     -72.484 -13.073 -20.570  1.00 61.68      B    C
ATOM   3704  O   SER   563     -73.270 -13.826 -21.140  1.00 61.85      B    O
ATOM   3705  N   SER   564     -72.883 -12.085 -19.780  1.00 63.51      B    N
ATOM   3706  CA  SER   564     -74.296 -11.841 -19.540  1.00 65.75      B    C
ATOM   3707  CB  SER   564     -74.798 -12.760 -18.424  1.00 65.21      B    C
ATOM   3708  OG  SER   564     -76.187 -12.593 -18.216  1.00 64.95      B    O
ATOM   3709  C   SER   564     -74.542 -10.389 -19.156  1.00 67.58      B    C
ATOM   3710  O   SER   564     -73.912  -9.870 -18.236  1.00 67.06      B    O
ATOM   3711  N   HIS   565     -75.458  -9.735 -19.862  1.00 70.45      B    N
ATOM   3712  CA  HIS   565     -75.896  -8.401 -19.475  1.00 74.26      B    C
ATOM   3713  CB  HIS   565     -75.342  -7.352 -20.444  1.00 74.10      B    C
ATOM   3714  CG  HIS   565     -76.129  -7.216 -21.710  1.00 75.03      B    C
ATOM   3715  CD2 HIS   565     -77.193  -6.437 -22.019  1.00 75.03      B    C
ATOM   3716  ND1 HIS   565     -75.824  -7.918 -22.857  1.00 75.79      B    N
ATOM   3717  CE1 HIS   565     -76.664  -7.576 -23.817  1.00 75.02      B    C
ATOM   3718  NE2 HIS   565     -77.505  -6.679 -23.335  1.00 74.96      B    N
ATOM   3719  C   HIS   565     -77.417  -8.327 -19.447  1.00 76.76      B    C
ATOM   3720  O   HIS   565     -78.093  -9.033 -20.191  1.00 76.35      B    O
ATOM   3721  N   TRP   566     -77.952  -7.471 -18.582  1.00 80.24      B    N
ATOM   3722  CA  TRP   566     -79.395  -7.319 -18.457  1.00 83.92      B    C
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ATOM   3723  CB  TRP   566     -79.885  -7.999 -17.181  1.00 82.87       B     C
ATOM   3724  CG  TRP   566     -79.070  -7.676 -15.975  1.00 81.41       B     C
ATOM   3725  CD2 TRP   566     -77.859  -8.319 -15.564  1.00 80.85       B     C
ATOM   3726  CE2 TRP   566     -77.461  -7.724 -14.351  1.00 80.81       B     C
ATOM   3727  CE3 TRP   566     -77.073  -9.342 -16.103  1.00 80.36       B     C
ATOM   3728  CD1 TRP   566     -79.348  -6.740 -15.025  1.00 81.33       B     C
ATOM   3729  NE1 TRP   566     -78.387  -6.762 -14.043  1.00 81.30       B     N
ATOM   3730  CZ2 TRP   566     -76.314  -8.118 -13.667  1.00 80.57       B     C
ATOM   3731  CZ3 TRP   566     -75.934  -9.732 -15.423  1.00 80.05       B     C
ATOM   3732  CH2 TRP   566     -75.565  -9.122 -14.218  1.00 80.06       B     C
ATOM   3733  C   TRP   566     -79.835  -5.861 -18.459  1.00 87.50       B     C
ATOM   3734  O   TRP   566     -79.009  -4.951 -18.373  1.00 87.72       B     O
ATOM   3735  N   GLU   567     -81.146  -5.651 -18.555  1.00 91.79       B     N
ATOM   3736  CA  GLU   567     -81.711  -4.311 -18.649  1.00 95.79       B     C
ATOM   3737  CB  GLU   567     -82.770  -4.270 -19.749  1.00 96.18       B     C
ATOM   3738  CG  GLU   567     -82.799  -2.967 -20.519  1.00 98.36       B     C
ATOM   3739  CD  GLU   567     -81.568  -2.786 -21.384  1.00 99.33       B     C
ATOM   3740  OE1 GLU   567     -80.732  -3.715 -21.431  1.00 98.92       B     O
ATOM   3741  OE2 GLU   567     -81.436  -1.717 -22.019  1.00100.24       B     O
ATOM   3742  C   GLU   567     -82.333  -3.866 -17.328  1.00 98.41       B     C
ATOM   3743  O   GLU   567     -82.113  -2.742 -16.876  1.00 98.57       B     O
ATOM   3744  N   VAL   568     -83.111  -4.751 -16.714  1.00101.90       B     N
ATOM   3745  CA  VAL   568     -83.733  -4.454 -15.428  1.00105.56       B     C
ATOM   3746  CB  VAL   568     -84.660  -5.600 -14.971  1.00105.81       B     C
ATOM   3747  CG1 VAL   568     -85.738  -5.844 -16.016  1.00105.97       B     C
ATOM   3748  CG2 VAL   568     -83.847  -6.864 -14.728  1.00105.81       B     C
ATOM   3749  C   VAL   568     -82.657  -4.251 -14.371  1.00107.91       B     C
ATOM   3750  O   VAL   568     -81.478  -4.485 -14.625  1.00108.57       B     O
ATOM   3751  N   GLU   569     -83.063  -3.812 -13.187  1.00110.90       B     N
ATOM   3752  CA  GLU   569     -82.113  -3.566 -12.111  1.00113.78       B     C
ATOM   3753  CB  GLU   569     -82.451  -2.250 -11.407  1.00114.54       B     C
ATOM   3754  CG  GLU   569     -82.319  -1.029 -12.303  1.00116.01       B     C
ATOM   3755  CD  GLU   569     -80.930  -0.895 -12.904  1.00116.56       B     C
ATOM   3756  OE1 GLU   569     -79.972  -0.649 -12.140  1.00116.54       B     O
ATOM   3757  OE2 GLU   569     -80.796  -1.036 -14.139  1.00116.94       B     O
ATOM   3758  C   GLU   569     -82.088  -4.706 -11.099  1.00115.27       B     C
ATOM   3759  O   GLU   569     -81.021  -5.120 -10.646  1.00115.42       B     O
ATOM   3760  N   ASP   570     -83.267  -5.215 -10.753  1.00116.99       B     N
ATOM   3761  CA  ASP   570     -83.379  -6.268  -9.751  1.00118.36       B     C
ATOM   3762  CB  ASP   570     -84.494  -5.930  -8.758  1.00119.50       B     C
ATOM   3763  CG  ASP   570     -84.260  -4.610  -8.044  1.00120.50       B     C
ATOM   3764  OD1 ASP   570     -85.090  -4.241  -7.185  1.00120.98       B     O
ATOM   3765  OD2 ASP   570     -83.247  -3.941  -8.343  1.00120.72       B     O
ATOM   3766  C   ASP   570     -83.652  -7.627 -10.388  1.00118.64       B     C
ATOM   3767  O   ASP   570     -84.496  -7.752 -11.277  1.00118.66       B     O
ATOM   3768  N   LEU   571     -82.927  -8.641  -9.928  1.00118.81       B     N
ATOM   3769  CA  LEU   571     -83.060  -9.990 -10.463  1.00118.86       B     C
ATOM   3770  CB  LEU   571     -81.836 -10.344 -11.317  1.00118.99       B     C
ATOM   3771  CG  LEU   571     -81.609  -9.554 -12.613  1.00118.90       B     C
ATOM   3772  CD1 LEU   571     -81.205  -8.124 -12.294  1.00119.28       B     C
ATOM   3773  CD2 LEU   571     -80.523 -10.230 -13.434  1.00118.88       B     C
ATOM   3774  C   LEU   571     -83.215 -11.009  -9.336  1.00118.75       B     C
ATOM   3775  O   LEU   571     -84.241 -11.682  -9.227  1.00118.42       B     O
ATOM   3776  N   PRO   585     -72.292 -29.792 -21.993  1.00 83.79       B     N
ATOM   3777  CD  PRO   585     -72.479 -31.194 -22.411  1.00 84.05       B     C
ATOM   3778  CA  PRO   585     -70.992 -29.260 -22.422  1.00 83.07       B     C
ATOM   3779  CB  PRO   585     -70.252 -30.493 -22.939  1.00 83.40       B     C
ATOM   3780  CG  PRO   585     -71.337 -31.427 -23.365  1.00 83.43       B     C
ATOM   3781  C   PRO   585     -71.129 -28.186 -23.496  1.00 81.48       B     C
ATOM   3782  O   PRO   585     -71.931 -28.321 -24.418  1.00 80.88       B     O
ATOM   3783  N   ASN   586     -70.340 -27.124 -23.365  1.00 80.01       B     N
ATOM   3784  CA  ASN   586     -70.363 -26.010 -24.311  1.00 78.83       B     C
ATOM   3785  CB  ASN   586     -70.162 -26.507 -25.749  1.00 79.79       B     C
ATOM   3786  CG  ASN   586     -68.793 -27.124 -25.974  1.00 80.52       B     C
ATOM   3787  OD1 ASN   586     -67.783 -26.421 -26.031  1.00 79.27       B     O
ATOM   3788  ND2 ASN   586     -68.754 -28.447 -26.108  1.00 81.46       B     N
ATOM   3789  C   ASN   586     -71.659 -25.214 -24.243  1.00 77.08       B     C
ATOM   3790  O   ASN   586     -72.162 -24.768 -25.271  1.00 76.87       B     O
ATOM   3791  N   GLN   587     -72.197 -25.034 -23.040  1.00 75.05       B     N
ATOM   3792  CA  GLN   587     -73.408 -24.238 -22.875  1.00 74.57       B     C
ATOM   3793  CB  GLN   587     -74.588 -25.142 -22.512  1.00 74.98       B     C
ATOM   3794  CG  GLN   587     -75.876 -24.385 -22.224  1.00 75.59       B     C
ATOM   3795  CD  GLN   587     -77.085 -25.298 -22.114  1.00 76.09       B     C
ATOM   3796  OE1 GLN   587     -77.886 -25.396 -23.044  1.00 76.13       B     O
ATOM   3797  NE2 GLN   587     -77.223 -25.970 -20.973  1.00 75.12       B     N
ATOM   3798  C   GLN   587     -73.263 -23.146 -21.819  1.00 73.56       B     C
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ATOM   3799  O   GLN   587     -72.681 -23.372 -20.759  1.00 73.19      B    O
ATOM   3800  N   CYS   588     -73.796 -21.964 -22.118  1.00 72.91      B    N
ATOM   3801  CA  CYS   588     -73.872 -20.875 -21.144  1.00 72.44      B    C
ATOM   3802  C   CYS   588     -75.271 -20.786 -20.551  1.00 73.33      B    C
ATOM   3803  O   CYS   588     -76.266 -20.833 -21.276  1.00 73.45      B    O
ATOM   3804  CB  CYS   588     -73.541 -19.530 -21.796  1.00 70.56      B    C
ATOM   3805  SG  CYS   588     -71.864 -19.371 -22.479  1.00 68.54      B    S
ATOM   3806  N   VAL   589     -75.348 -20.645 -19.234  1.00 74.61      B    N
ATOM   3807  CA  VAL   589     -76.629 -20.427 -18.579  1.00 76.86      B    C
ATOM   3808  CB  VAL   589     -76.974 -21.577 -17.618  1.00 76.35      B    C
ATOM   3809  CG1 VAL   589     -78.348 -21.346 -17.016  1.00 76.62      B    C
ATOM   3810  CG2 VAL   589     -76.926 -22.905 -18.355  1.00 76.25      B    C
ATOM   3811  C   VAL   589     -76.612 -19.128 -17.790  1.00 78.39      B    C
ATOM   3812  O   VAL   589     -75.810 -18.956 -16.874  1.00 78.41      B    O
ATOM   3813  N   GLY   590     -77.503 -18.214 -18.152  1.00 80.86      B    N
ATOM   3814  CA  GLY   590     -77.608 -16.965 -17.427  1.00 83.83      B    C
ATOM   3815  C   GLY   590     -78.956 -16.817 -16.753  1.00 85.87      B    C
ATOM   3816  O   GLY   590     -79.812 -17.695 -16.854  1.00 86.28      B    O
ATOM   3817  N   HIS   591     -79.143 -15.700 -16.061  1.00 87.95      B    N
ATOM   3818  CA  HIS   591     -80.426 -15.381 -15.452  1.00 89.48      B    C
ATOM   3819  CB  HIS   591     -80.329 -14.043 -14.716  1.00 90.53      B    C
ATOM   3820  CG  HIS   591     -81.482 -13.768 -13.803  1.00 91.97      B    C
ATOM   3821  CD2 HIS   591     -81.585 -13.837 -12.454  1.00 92.54      B    C
ATOM   3822  ND1 HIS   591     -82.714 -13.355 -14.262  1.00 92.28      B    N
ATOM   3823  CE1 HIS   591     -83.527 -13.181 -13.235  1.00 92.99      B    C
ATOM   3824  NE2 HIS   591     -82.867 -13.466 -12.126  1.00 92.92      B    N
ATOM   3825  C   HIS   591     -81.503 -15.308 -16.534  1.00 89.95      B    C
ATOM   3826  O   HIS   591     -81.210 -15.038 -17.700  1.00 89.23      B    O
ATOM   3827  N   ARG   592     -82.749 -15.554 -16.143  1.00 90.86      B    N
ATOM   3828  CA  ARG   592     -83.861 -15.556 -17.088  1.00 91.76      B    C
ATOM   3829  CB  ARG   592     -85.141 -16.024 -16.390  1.00 94.45      B    C
ATOM   3830  CG  ARG   592     -85.501 -15.201 -15.163  1.00 98.10      B    C
ATOM   3831  CD  ARG   592     -86.947 -15.407 -14.740  1.00101.13      B    C
ATOM   3832  NE  ARG   592     -87.177 -16.735 -14.177  1.00103.71      B    N
ATOM   3833  CZ  ARG   592     -88.312 -17.112 -13.596  1.00105.10      B    C
ATOM   3834  NH1 ARG   592     -88.435 -18.342 -13.112  1.00105.47      B    N
ATOM   3835  NH2 ARG   592     -89.325 -16.259 -13.497  1.00105.79      B    N
ATOM   3836  C   ARG   592     -84.085 -14.169 -17.684  1.00 90.52      B    C
ATOM   3837  O   ARG   592     -84.473 -14.038 -18.845  1.00 89.74      B    O
ATOM   3838  N   GLU   593     -83.834 -13.136 -16.886  1.00 89.53      B    N
ATOM   3839  CA  GLU   593     -84.083 -11.762 -17.310  1.00 88.86      B    C
ATOM   3840  CB  GLU   593     -84.361 -10.877 -16.092  1.00 90.90      B    C
ATOM   3841  CG  GLU   593     -85.593 -11.278 -15.292  1.00 93.06      B    C
ATOM   3842  CD  GLU   593     -85.834 -10.371 -14.095  1.00 94.88      B    C
ATOM   3843  OE1 GLU   593     -86.475  -9.311 -14.270  1.00 95.59      B    O
ATOM   3844  OE2 GLU   593     -85.383 -10.717 -12.980  1.00 95.43      B    O
ATOM   3845  C   GLU   593     -82.917 -11.181 -18.102  1.00 86.91      B    C
ATOM   3846  O   GLU   593     -83.001 -10.063 -18.611  1.00 86.77      B    O
ATOM   3847  N   ALA   594     -81.831 -11.941 -18.206  1.00 84.52      B    N
ATOM   3848  CA  ALA   594     -80.616 -11.452 -18.852  1.00 81.65      B    C
ATOM   3849  CB  ALA   594     -79.410 -11.736 -17.961  1.00 81.53      B    C
ATOM   3850  C   ALA   594     -80.394 -12.061 -20.234  1.00 79.44      B    C
ATOM   3851  O   ALA   594     -80.829 -13.179 -20.508  1.00 79.69      B    O
ATOM   3852  N   SER   595     -79.718 -11.316 -21.105  1.00 76.43      B    N
ATOM   3853  CA  SER   595     -79.199 -11.875 -22.345  1.00 73.80      B    C
ATOM   3854  CB  SER   595     -78.882 -10.764 -23.343  1.00 73.82      B    C
ATOM   3855  OG  SER   595     -80.030  -9.986 -23.621  1.00 74.77      B    O
ATOM   3856  C   SER   595     -77.925 -12.644 -22.024  1.00 72.54      B    C
ATOM   3857  O   SER   595     -77.189 -12.282 -21.108  1.00 72.16      B    O
ATOM   3858  N   ILE   596     -77.669 -13.708 -22.776  1.00 71.00      B    N
ATOM   3859  CA  ILE   596     -76.505 -14.546 -22.527  1.00 68.81      B    C
ATOM   3860  CB  ILE   596     -76.932 -15.985 -22.162  1.00 69.08      B    C
ATOM   3861  CG2 ILE   596     -77.525 -16.682 -23.376  1.00 69.30      B    C
ATOM   3862  CG1 ILE   596     -75.731 -16.768 -21.634  1.00 68.96      B    C
ATOM   3863  CD1 ILE   596     -75.266 -16.303 -20.276  1.00 68.21      B    C
ATOM   3864  C   ILE   596     -75.613 -14.572 -23.765  1.00 67.78      B    C
ATOM   3865  O   ILE   596     -76.101 -14.666 -24.892  1.00 67.52      B    O
ATOM   3866  N   HIS   597     -74.304 -14.478 -23.551  1.00 66.74      B    N
ATOM   3867  CA  HIS   597     -73.350 -14.407 -24.653  1.00 65.51      B    C
ATOM   3868  CB  HIS   597     -72.680 -13.033 -24.678  1.00 67.23      B    C
ATOM   3869  CG  HIS   597     -73.646 -11.893 -24.586  1.00 69.06      B    C
ATOM   3870  CD2 HIS   597     -74.065 -11.162 -23.525  1.00 68.78      B    C
ATOM   3871  ND1 HIS   597     -74.330 -11.405 -25.680  1.00 69.46      B    N
ATOM   3872  CE1 HIS   597     -75.128 -10.425 -25.297  1.00 69.61      B    C
ATOM   3873  NE2 HIS   597     -74.987 -10.258 -23.993  1.00 69.86      B    N
ATOM   3874  C   HIS   597     -72.292 -15.492 -24.519  1.00 63.90      B    C
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ATOM   3875  O   HIS   597     -71.750 -15.713 -23.440  1.00 64.34      B    O
ATOM   3876  N   ALA   598     -72.000 -16.169 -25.622  1.00 61.69      B    N
ATOM   3877  CA  ALA   598     -71.035 -17.257 -25.606  1.00 59.24      B    C
ATOM   3878  CB  ALA   598     -71.733 -18.580 -25.919  1.00 59.25      B    C
ATOM   3879  C   ALA   598     -69.922 -17.002 -26.610  1.00 57.16      B    C
ATOM   3880  O   ALA   598     -70.179 -16.648 -27.759  1.00 57.27      B    O
ATOM   3881  N   SER   599     -68.684 -17.182 -26.172  1.00 55.41      B    N
ATOM   3882  CA  SER   599     -67.548 -17.103 -27.077  1.00 54.67      B    C
ATOM   3883  CB  SER   599     -66.342 -16.495 -26.349  1.00 54.38      B    C
ATOM   3884  OG  SER   599     -65.192 -16.463 -27.181  1.00 53.69      B    O
ATOM   3885  C   SER   599     -67.212 -18.506 -27.586  1.00 54.57      B    C
ATOM   3886  O   SER   599     -66.904 -19.401 -26.800  1.00 53.49      B    O
ATOM   3887  N   CYS   600     -67.282 -18.698 -28.901  1.00 55.25      B    N
ATOM   3888  CA  CYS   600     -66.994 -19.999 -29.498  1.00 58.00      B    C
ATOM   3889  C   CYS   600     -65.816 -19.885 -30.457  1.00 58.00      B    C
ATOM   3890  O   CYS   600     -65.784 -18.994 -31.300  1.00 58.78      B    O
ATOM   3891  CB  CYS   600     -68.218 -20.525 -30.259  1.00 59.36      B    C
ATOM   3892  SG  CYS   600     -69.778 -20.583 -29.309  1.00 63.79      B    S
ATOM   3893  N   CYS   601     -64.848 -20.784 -30.330  1.00 57.59      B    N
ATOM   3894  CA  CYS   601     -63.696 -20.762 -31.220  1.00 59.73      B    C
ATOM   3895  C   CYS   601     -63.475 -22.110 -31.892  1.00 59.37      B    C
ATOM   3896  O   CYS   601     -63.589 -23.160 -31.260  1.00 58.29      B    O
ATOM   3897  CB  CYS   601     -62.420 -20.395 -30.461  1.00 61.31      B    C
ATOM   3898  SG  CYS   601     -62.321 -18.753 -29.670  1.00 67.30      B    S
ATOM   3899  N   HIS   602     -63.147 -22.065 -33.177  1.00 59.49      B    N
ATOM   3900  CA  HIS   602     -62.668 -23.232 -33.895  1.00 60.04      B    C
ATOM   3901  CB  HIS   602     -63.299 -23.278 -35.293  1.00 62.97      B    C
ATOM   3902  CG  HIS   602     -62.908 -24.479 -36.099  1.00 66.97      B    C
ATOM   3903  CD2 HIS   602     -63.643 -25.517 -36.565  1.00 68.22      B    C
ATOM   3904  ND1 HIS   602     -61.615 -24.706 -36.521  1.00 68.55      B    N
ATOM   3905  CE1 HIS   602     -61.570 -25.832 -37.211  1.00 68.47      B    C
ATOM   3906  NE2 HIS   602     -62.788 -26.344 -37.253  1.00 68.91      B    N
ATOM   3907  C   HIS   602     -61.156 -23.094 -34.005  1.00 59.13      B    C
ATOM   3908  O   HIS   602     -60.658 -22.117 -34.560  1.00 58.95      B    O
ATOM   3909  N   ALA   603     -60.425 -24.059 -33.462  1.00 57.63      B    N
ATOM   3910  CA  ALA   603     -58.972 -24.045 -33.551  1.00 57.29      B    C
ATOM   3911  CB  ALA   603     -58.392 -23.137 -32.478  1.00 57.06      B    C
ATOM   3912  C   ALA   603     -58.414 -25.455 -33.405  1.00 58.27      B    C
ATOM   3913  O   ALA   603     -58.907 -26.254 -32.611  1.00 57.05      B    O
ATOM   3914  N   PRO   604     -57.363 -25.770 -34.170  1.00 59.55      B    N
ATOM   3915  CD  PRO   604     -56.540 -24.798 -34.914  1.00 60.80      B    C
ATOM   3916  CA  PRO   604     -56.843 -27.137 -34.279  1.00 59.96      B    C
ATOM   3917  CB  PRO   604     -55.719 -27.016 -35.308  1.00 60.62      B    C
ATOM   3918  CG  PRO   604     -55.294 -25.580 -35.237  1.00 61.97      B    C
ATOM   3919  C   PRO   604     -56.344 -27.701 -32.954  1.00 59.56      B    C
ATOM   3920  O   PRO   604     -55.343 -27.238 -32.409  1.00 60.04      B    O
ATOM   3921  N   GLY   605     -57.046 -28.708 -32.445  1.00 58.14      B    N
ATOM   3922  CA  GLY   605     -56.616 -29.359 -31.223  1.00 55.88      B    C
ATOM   3923  C   GLY   605     -57.024 -28.610 -29.969  1.00 54.81      B    C
ATOM   3924  O   GLY   605     -56.578 -28.938 -28.870  1.00 55.62      B    O
ATOM   3925  N   LEU   606     -57.871 -27.600 -30.126  1.00 52.76      B    N
ATOM   3926  CA  LEU   606     -58.380 -26.859 -28.980  1.00 50.04      B    C
ATOM   3927  CB  LEU   606     -59.100 -25.593 -29.445  1.00 48.66      B    C
ATOM   3928  CG  LEU   606     -59.707 -24.770 -28.305  1.00 47.30      B    C
ATOM   3929  CD1 LEU   606     -58.587 -24.229 -27.437  1.00 47.38      B    C
ATOM   3930  CD2 LEU   606     -60.546 -23.640 -28.862  1.00 46.45      B    C
ATOM   3931  C   LEU   606     -59.352 -27.715 -28.179  1.00 50.49      B    C
ATOM   3932  O   LEU   606     -60.373 -28.170 -28.705  1.00 50.29      B    O
ATOM   3933  N   GLU   607     -59.044 -27.932 -26.905  1.00 49.74      B    N
ATOM   3934  CA  GLU   607     -60.027 -28.511 -26.004  1.00 49.92      B    C
ATOM   3935  CB  GLU   607     -59.688 -29.975 -25.689  1.00 51.37      B    C
ATOM   3936  CG  GLU   607     -58.375 -30.208 -24.972  1.00 54.60      B    C
ATOM   3937  CD  GLU   607     -58.294 -31.599 -24.346  1.00 56.01      B    C
ATOM   3938  OE1 GLU   607     -57.200 -32.202 -24.360  1.00 56.47      B    O
ATOM   3939  OE2 GLU   607     -59.325 -32.089 -23.836  1.00 57.69      B    O
ATOM   3940  C   GLU   607     -60.151 -27.707 -24.720  1.00 49.55      B    C
ATOM   3941  O   GLU   607     -59.161 -27.218 -24.179  1.00 49.44      B    O
ATOM   3942  N   CYS   608     -61.384 -27.565 -24.249  1.00 49.05      B    N
ATOM   3943  CA  CYS   608     -61.677 -26.794 -23.050  1.00 49.93      B    C
ATOM   3944  C   CYS   608     -62.611 -27.598 -22.155  1.00 51.10      B    C
ATOM   3945  O   CYS   608     -63.400 -28.410 -22.641  1.00 51.03      B    O
ATOM   3946  CB  CYS   608     -62.374 -25.482 -23.406  1.00 49.04      B    C
ATOM   3947  SG  CYS   608     -61.522 -24.352 -24.553  1.00 51.08      B    S
ATOM   3948  N   LYS   609     -62.526 -27.357 -20.852  1.00 51.23      B    N
ATOM   3949  CA  LYS   609     -63.435 -27.976 -19.901  1.00 52.84      B    C
ATOM   3950  CB  LYS   609     -62.791 -29.219 -19.286  1.00 53.14      B    C
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ATOM   3951  CG  LYS   609     -61.523 -28.955 -18.501  1.00 56.59      B    C
ATOM   3952  CD  LYS   609     -60.931 -30.262 -17.996  1.00 59.65      B    C
ATOM   3953  CE  LYS   609     -59.776 -30.034 -17.035  1.00 62.05      B    C
ATOM   3954  NZ  LYS   609     -59.273 -31.333 -16.491  1.00 64.13      B    N
ATOM   3955  C   LYS   609     -63.807 -26.985 -18.808  1.00 53.60      B    C
ATOM   3956  O   LYS   609     -63.155 -25.953 -18.652  1.00 54.60      B    O
ATOM   3957  N   VAL   610     -64.859 -27.297 -18.059  1.00 53.79      B    N
ATOM   3958  CA  VAL   610     -65.302 -26.448 -16.961  1.00 54.51      B    C
ATOM   3959  CB  VAL   610     -66.830 -26.320 -16.947  1.00 53.63      B    C
ATOM   3960  CG1 VAL   610     -67.271 -25.529 -15.731  1.00 53.41      B    C
ATOM   3961  CG2 VAL   610     -67.302 -25.645 -18.218  1.00 53.06      B    C
ATOM   3962  C   VAL   610     -64.856 -26.978 -15.603  1.00 56.27      B    C
ATOM   3963  O   VAL   610     -64.852 -28.186 -15.371  1.00 56.36      B    O
ATOM   3964  N   LYS   611     -64.472 -26.064 -14.714  1.00 58.50      B    N
ATOM   3965  CA  LYS   611     -64.239 -26.387 -13.308  1.00 60.09      B    C
ATOM   3966  CB  LYS   611     -62.755 -26.257 -12.963  1.00 60.15      B    C
ATOM   3967  CG  LYS   611     -61.822 -26.853 -14.002  1.00 62.60      B    C
ATOM   3968  CD  LYS   611     -60.861 -27.869 -13.396  1.00 64.20      B    C
ATOM   3969  CE  LYS   611     -59.980 -27.252 -12.319  1.00 63.58      B    C
ATOM   3970  NZ  LYS   611     -60.714 -27.067 -11.039  1.00 62.59      B    N
ATOM   3971  C   LYS   611     -65.042 -25.421 -12.449  1.00 61.71      B    C
ATOM   3972  O   LYS   611     -65.139 -24.235 -12.764  1.00 62.06      B    O
ATOM   3973  N   GLU   612     -65.622 -25.929 -11.369  1.00 63.68      B    N
ATOM   3974  CA  GLU   612     -66.417 -25.101 -10.474  1.00 66.24      B    C
ATOM   3975  CB  GLU   612     -67.877 -25.550 -10.484  1.00 67.02      B    C
ATOM   3976  CG  GLU   612     -68.589 -25.366 -11.802  1.00 70.34      B    C
ATOM   3977  CD  GLU   612     -70.077 -25.645 -11.685  1.00 72.40      B    C
ATOM   3978  OE1 GLU   612     -70.810 -25.417 -12.671  1.00 73.78      B    O
ATOM   3979  OE2 GLU   612     -70.512 -26.091 -10.600  1.00 73.79      B    O
ATOM   3980  C   GLU   612     -65.901 -25.158  -9.042  1.00 68.03      B    C
ATOM   3981  O   GLU   612     -65.141 -26.056  -8.675  1.00 66.96      B    O
ATOM   3982  N   HIS   613     -66.327 -24.185  -8.241  1.00 70.17      B    N
ATOM   3983  CA  HIS   613     -66.140 -24.226  -6.798  1.00 72.95      B    C
ATOM   3984  CB  HIS   613     -64.726 -23.777  -6.426  1.00 73.69      B    C
ATOM   3985  CG  HIS   613     -64.399 -23.948  -4.975  1.00 74.96      B    C
ATOM   3986  CD2 HIS   613     -64.782 -23.243  -3.885  1.00 75.11      B    C
ATOM   3987  ND1 HIS   613     -63.574 -24.951  -4.512  1.00 76.02      B    N
ATOM   3988  CE1 HIS   613     -63.462 -24.856  -3.199  1.00 75.34      B    C
ATOM   3989  NE2 HIS   613     -64.185 -23.827  -2.793  1.00 75.59      B    N
ATOM   3990  C   HIS   613     -67.162 -23.310  -6.142  1.00 75.10      B    C
ATOM   3991  O   HIS   613     -67.342 -22.165  -6.557  1.00 74.72      B    O
ATOM   3992  N   GLY   614     -67.840 -23.824  -5.124  1.00 78.12      B    N
ATOM   3993  CA  GLY   614     -68.806 -23.017  -4.404  1.00 81.74      B    C
ATOM   3994  C   GLY   614     -68.482 -22.968  -2.926  1.00 84.51      B    C
ATOM   3995  O   GLY   614     -67.916 -23.913  -2.376  1.00 84.08      B    O
ATOM   3996  N   ILE   615     -68.829 -21.860  -2.281  1.00 87.55      B    N
ATOM   3997  CA  ILE   615     -68.696 -21.749  -0.836  1.00 90.95      B    C
ATOM   3998  CB  ILE   615     -67.545 -20.795  -0.445  1.00 90.68      B    C
ATOM   3999  CG2 ILE   615     -67.478 -20.648   1.070  1.00 90.91      B    C
ATOM   4000  CG1 ILE   615     -66.218 -21.342  -0.970  1.00 90.52      B    C
ATOM   4001  CD1 ILE   615     -65.019 -20.498  -0.596  1.00 91.21      B    C
ATOM   4002  C   ILE   615     -70.001 -21.236  -0.240  1.00 93.64      B    C
ATOM   4003  O   ILE   615     -70.584 -20.268  -0.734  1.00 93.43      B    O
ATOM   4004  N   PRO   616     -70.480 -21.892   0.829  1.00 96.49      B    N
ATOM   4005  CD  PRO   616     -69.870 -23.095   1.420  1.00 97.34      B    C
ATOM   4006  CA  PRO   616     -71.741 -21.540   1.490  1.00 98.31      B    C
ATOM   4007  CB  PRO   616     -71.878 -22.590   2.592  1.00 98.23      B    C
ATOM   4008  CG  PRO   616     -71.022 -23.732   2.137  1.00 97.91      B    C
ATOM   4009  C   PRO   616     -71.695 -20.127   2.056  1.00100.07      B    C
ATOM   4010  O   PRO   616     -72.555 -19.296   1.757  1.00100.25      B    O
ATOM   4011  N   ALA   617     -70.681 -19.863   2.875  1.00101.81      B    N
ATOM   4012  CA  ALA   617     -70.478 -18.536   3.440  1.00103.72      B    C
ATOM   4013  CB  ALA   617     -70.126 -18.644   4.920  1.00103.96      B    C
ATOM   4014  C   ALA   617     -69.369 -17.810   2.690  1.00104.59      B    C
ATOM   4015  O   ALA   617     -68.188 -17.958   3.006  1.00104.51      B    O
ATOM   4016  N   PRO   618     -69.740 -17.009   1.681  1.00105.43      B    N
ATOM   4017  CD  PRO   618     -71.117 -16.737   1.232  1.00105.79      B    C
ATOM   4018  CA  PRO   618     -68.748 -16.235   0.929  1.00105.78      B    C
ATOM   4019  CB  PRO   618     -69.568 -15.579  -0.181  1.00106.12      B    C
ATOM   4020  CG  PRO   618     -70.960 -15.521   0.363  1.00106.24      B    C
ATOM   4021  C   PRO   618     -68.052 -15.211   1.821  1.00105.78      B    C
ATOM   4022  O   PRO   618     -68.610 -14.157   2.131  1.00105.85      B    O
ATOM   4023  N   GLN   619     -66.829 -15.536   2.228  1.00105.22      B    N
ATOM   4024  CA  GLN   619     -66.071 -14.709   3.158  1.00104.16      B    C
ATOM   4025  CB  GLN   619     -64.819 -15.465   3.610  1.00106.08      B    C
ATOM   4026  CG  GLN   619     -63.990 -14.740   4.651  1.00109.04      B    C
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ATOM   4027  CD  GLN   619     -62.910 -15.623   5.243  1.00110.77      B    C
ATOM   4028  OE1 GLN   619     -62.885 -15.867   6.451  1.00111.68      B    O
ATOM   4029  NE2 GLN   619     -62.010 -16.111   4.394  1.00111.21      B    N
ATOM   4030  C   GLN   619     -65.675 -13.369   2.532  1.00101.86      B    C
ATOM   4031  O   GLN   619     -65.431 -12.389   3.237  1.00102.25      B    O
ATOM   4032  N   GLY   620     -65.619 -13.337   1.204  1.00 98.47      B    N
ATOM   4033  CA  GLY   620     -65.264 -12.120   0.497  1.00 93.13      B    C
ATOM   4034  C   GLY   620     -64.971 -12.411  -0.964  1.00 89.75      B    C
ATOM   4035  O   GLY   620     -65.153 -11.556  -1.832  1.00 89.35      B    O
ATOM   4036  N   GLN   621     -64.518 -13.630  -1.236  1.00 85.41      B    N
ATOM   4037  CA  GLN   621     -64.285 -14.065  -2.604  1.00 81.21      B    C
ATOM   4038  CB  GLN   621     -62.963 -13.499  -3.122  1.00 80.76      B    C
ATOM   4039  CG  GLN   621     -61.738 -14.039  -2.412  1.00 79.63      B    C
ATOM   4040  CD  GLN   621     -60.449 -13.607  -3.080  1.00 80.09      B    C
ATOM   4041  OE1 GLN   621     -60.360 -12.509  -3.631  1.00 79.55      B    O
ATOM   4042  NE2 GLN   621     -59.441 -14.471  -3.036  1.00 79.53      B    N
ATOM   4043  C   GLN   621     -64.261 -15.585  -2.717  1.00 78.31      B    C
ATOM   4044  O   GLN   621     -63.759 -16.280  -1.833  1.00 77.75      B    O
ATOM   4045  N   VAL   622     -64.810 -16.094  -3.813  1.00 74.56      B    N
ATOM   4046  CA  VAL   622     -64.715 -17.511  -4.135  1.00 70.71      B    C
ATOM   4047  CB  VAL   622     -66.096 -18.084  -4.517  1.00 70.57      B    C
ATOM   4048  CG1 VAL   622     -65.987 -19.574  -4.772  1.00 70.29      B    C
ATOM   4049  CG2 VAL   622     -67.099 -17.800  -3.413  1.00 70.77      B    C
ATOM   4050  C   VAL   622     -63.773 -17.661  -5.323  1.00 68.02      B    C
ATOM   4051  O   VAL   622     -63.844 -16.883  -6.273  1.00 67.71      B    O
ATOM   4052  N   THR   623     -62.889 -18.652  -5.272  1.00 65.11      B    N
ATOM   4053  CA  THR   623     -61.955 -18.871  -6.371  1.00 62.26      B    C
ATOM   4054  CB  THR   623     -60.535 -18.421  -6.005  1.00 62.27      B    C
ATOM   4055  OG1 THR   623     -60.016 -19.274  -4.979  1.00 62.80      B    O
ATOM   4056  CG2 THR   623     -60.539 -16.982  -5.515  1.00 61.70      B    C
ATOM   4057  C   THR   623     -61.868 -20.329  -6.808  1.00 61.06      B    C
ATOM   4058  O   THR   623     -62.154 -21.243  -6.037  1.00 60.46      B    O
ATOM   4059  N   VAL   624     -61.463 -20.528  -8.059  1.00 58.95      B    N
ATOM   4060  CA  VAL   624     -61.115 -21.845  -8.570  1.00 56.86      B    C
ATOM   4061  CB  VAL   624     -62.357 -22.553  -9.183  1.00 56.41      B    C
ATOM   4062  CG1 VAL   624     -62.927 -21.727 -10.326  1.00 56.31      B    C
ATOM   4063  CG2 VAL   624     -61.979 -23.939  -9.672  1.00 55.46      B    C
ATOM   4064  C   VAL   624     -60.026 -21.684  -9.634  1.00 55.91      B    C
ATOM   4065  O   VAL   624     -60.034 -20.723 -10.399  1.00 54.97      B    O
ATOM   4066  N   ALA   625     -59.085 -22.620  -9.674  1.00 55.07      B    N
ATOM   4067  CA  ALA   625     -57.945 -22.504 -10.573  1.00 56.43      B    C
ATOM   4068  CB  ALA   625     -56.656 -22.419  -9.766  1.00 55.50      B    C
ATOM   4069  C   ALA   625     -57.869 -23.673 -11.548  1.00 57.84      B    C
ATOM   4070  O   ALA   625     -58.319 -24.776 -11.241  1.00 58.31      B    O
ATOM   4071  N   CYS   626     -57.294 -23.424 -12.722  1.00 57.81      B    N
ATOM   4072  CA  CYS   626     -57.054 -24.479 -13.692  1.00 59.13      B    C
ATOM   4073  C   CYS   626     -55.829 -25.288 -13.308  1.00 61.75      B    C
ATOM   4074  O   CYS   626     -54.831 -24.741 -12.845  1.00 62.27      B    O
ATOM   4075  CB  CYS   626     -56.840 -23.896 -15.088  1.00 56.84      B    C
ATOM   4076  SG  CYS   626     -58.258 -22.975 -15.751  1.00 57.44      B    S
ATOM   4077  N   GLU   627     -55.911 -26.596 -13.525  1.00 64.64      B    N
ATOM   4078  CA  GLU   627     -54.810 -27.501 -13.241  1.00 67.51      B    C
ATOM   4079  CB  GLU   627     -55.229 -28.938 -13.553  1.00 70.84      B    C
ATOM   4080  CG  GLU   627     -56.560 -29.333 -12.944  1.00 76.92      B    C
ATOM   4081  CD  GLU   627     -57.452 -30.066 -13.929  1.00 81.54      B    C
ATOM   4082  OE1 GLU   627     -57.100 -31.203 -14.322  1.00 83.33      B    O
ATOM   4083  OE2 GLU   627     -58.503 -29.502 -14.311  1.00 83.28      B    O
ATOM   4084  C   GLU   627     -53.576 -27.147 -14.061  1.00 67.30      B    C
ATOM   4085  O   GLU   627     -53.669 -26.488 -15.097  1.00 67.09      B    O
ATOM   4086  N   GLU   628     -52.420 -27.595 -13.587  1.00 67.21      B    N
ATOM   4087  CA  GLU   628     -51.178 -27.462 -14.333  1.00 67.26      B    C
ATOM   4088  CB  GLU   628     -50.071 -28.260 -13.638  1.00 71.29      B    C
ATOM   4089  CG  GLU   628     -48.693 -28.097 -14.259  1.00 76.58      B    C
ATOM   4090  CD  GLU   628     -48.155 -26.687 -14.105  1.00 80.28      B    C
ATOM   4091  OE1 GLU   628     -47.423 -26.433 -13.121  1.00 82.51      B    O
ATOM   4092  OE2 GLU   628     -48.466 -25.833 -14.965  1.00 81.67      B    O
ATOM   4093  C   GLU   628     -51.377 -27.986 -15.751  1.00 65.26      B    C
ATOM   4094  O   GLU   628     -51.897 -29.084 -15.943  1.00 65.44      B    O
ATOM   4095  N   GLY   629     -50.963 -27.198 -16.738  1.00 62.46      B    N
ATOM   4096  CA  GLY   629     -51.086 -27.618 -18.123  1.00 58.56      B    C
ATOM   4097  C   GLY   629     -52.260 -26.986 -18.853  1.00 56.59      B    C
ATOM   4098  O   GLY   629     -52.297 -26.971 -20.085  1.00 56.28      B    O
ATOM   4099  N   TRP   630     -53.220 -26.466 -18.094  1.00 54.07      B    N
ATOM   4100  CA  TRP   630     -54.389 -25.811 -18.670  1.00 52.31      B    C
ATOM   4101  CB  TRP   630     -55.667 -26.350 -18.020  1.00 53.37      B    C
ATOM   4102  CG  TRP   630     -55.912 -27.798 -18.298  1.00 56.24      B    C
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ATOM   4103  CD2 TRP   630     -56.828 -28.348 -19.253  1.00 56.84      B    C
ATOM   4104  CE2 TRP   630     -56.728 -29.752 -19.168  1.00 57.44      B    C
ATOM   4105  CE3 TRP   630     -57.724 -27.791 -20.170  1.00 56.63      B    C
ATOM   4106  CD1 TRP   630     -55.310 -28.861 -17.691  1.00 56.81      B    C
ATOM   4107  NE1 TRP   630     -55.794 -30.037 -18.206  1.00 57.15      B    N
ATOM   4108  CZ2 TRP   630     -57.489 -30.608 -19.964  1.00 56.00      B    C
ATOM   4109  CZ3 TRP   630     -58.482 -28.644 -20.962  1.00 58.10      B    C
ATOM   4110  CH2 TRP   630     -58.357 -30.037 -20.852  1.00 56.56      B    C
ATOM   4111  C   TRP   630     -54.325 -24.295 -18.487  1.00 50.00      B    C
ATOM   4112  O   TRP   630     -53.696 -23.802 -17.555  1.00 49.79      B    O
ATOM   4113  N   THR   631     -54.987 -23.563 -19.378  1.00 46.86      B    N
ATOM   4114  CA  THR   631     -55.000 -22.106 -19.313  1.00 42.14      B    C
ATOM   4115  CB  THR   631     -54.472 -21.490 -20.628  1.00 41.03      B    C
ATOM   4116  OG1 THR   631     -53.126 -21.924 -20.850  1.00 38.22      B    O
ATOM   4117  CG2 THR   631     -54.510 -19.966 -20.568  1.00 39.04      B    C
ATOM   4118  C   THR   631     -56.415 -21.601 -19.069  1.00 41.59      B    C
ATOM   4119  O   THR   631     -57.349 -21.977 -19.777  1.00 41.97      B    O
ATOM   4120  N   LEU   632     -56.573 -20.743 -18.068  1.00 40.02      B    N
ATOM   4121  CA  LEU   632     -57.866 -20.126 -17.804  1.00 39.61      B    C
ATOM   4122  CB  LEU   632     -57.799 -19.316 -16.509  1.00 38.76      B    C
ATOM   4123  CG  LEU   632     -59.077 -18.608 -16.057  1.00 42.02      B    C
ATOM   4124  CD1 LEU   632     -60.205 -19.619 -15.901  1.00 41.47      B    C
ATOM   4125  CD2 LEU   632     -58.816 -17.899 -14.731  1.00 41.91      B    C
ATOM   4126  C   LEU   632     -58.232 -19.212 -18.973  1.00 40.31      B    C
ATOM   4127  O   LEU   632     -57.476 -18.301 -19.311  1.00 39.62      B    O
ATOM   4128  N   THR   633     -59.377 -19.465 -19.601  1.00 40.05      B    N
ATOM   4129  CA  THR   633     -59.849 -18.597 -20.676  1.00 40.37      B    C
ATOM   4130  CB  THR   633     -60.166 -19.385 -21.974  1.00 40.11      B    C
ATOM   4131  OG1 THR   633     -61.267 -20.270 -21.740  1.00 42.19      B    O
ATOM   4132  CG2 THR   633     -58.958 -20.187 -22.430  1.00 39.36      B    C
ATOM   4133  C   THR   633     -61.113 -17.855 -20.267  1.00 40.80      B    C
ATOM   4134  O   THR   633     -61.408 -16.790 -20.797  1.00 42.82      B    O
ATOM   4135  N   GLY   634     -61.868 -18.423 -19.335  1.00 41.84      B    N
ATOM   4136  CA  GLY   634     -63.129 -17.816 -18.949  1.00 43.05      B    C
ATOM   4137  C   GLY   634     -63.344 -17.877 -17.454  1.00 44.20      B    C
ATOM   4138  O   GLY   634     -62.980 -18.859 -16.813  1.00 44.52      B    O
ATOM   4139  N   CYS   635     -63.927 -16.823 -16.892  1.00 46.22      B    N
ATOM   4140  CA  CYS   635     -64.151 -16.751 -15.452  1.00 49.45      B    C
ATOM   4141  C   CYS   635     -65.479 -16.072 -15.176  1.00 50.61      B    C
ATOM   4142  O   CYS   635     -65.802 -15.046 -15.774  1.00 51.08      B    O
ATOM   4143  CB  CYS   635     -63.019 -15.979 -14.770  1.00 49.68      B    C
ATOM   4144  SG  CYS   635     -63.191 -15.778 -12.960  1.00 54.65      B    S
ATOM   4145  N   SER   636     -66.245 -16.647 -14.261  1.00 52.89      B    N
ATOM   4146  CA  SER   636     -67.661 -16.339 -14.186  1.00 56.15      B    C
ATOM   4147  CB  SER   636     -68.390 -17.073 -15.317  1.00 56.84      B    C
ATOM   4148  OG  SER   636     -69.709 -16.597 -15.483  1.00 59.24      B    O
ATOM   4149  C   SER   636     -68.215 -16.773 -12.839  1.00 57.63      B    C
ATOM   4150  O   SER   636     -67.656 -17.654 -12.187  1.00 57.25      B    O
ATOM   4151  N   ALA   637     -69.310 -16.148 -12.422  1.00 60.91      B    N
ATOM   4152  CA  ALA   637     -70.052 -16.611 -11.253  1.00 64.91      B    C
ATOM   4153  CB  ALA   637     -70.318 -15.446 -10.305  1.00 62.85      B    C
ATOM   4154  C   ALA   637     -71.373 -17.231 -11.704  1.00 68.14      B    C
ATOM   4155  O   ALA   637     -71.992 -16.760 -12.664  1.00 66.65      B    O
ATOM   4156  N   LEU   638     -71.803 -18.286 -11.016  1.00 72.27      B    N
ATOM   4157  CA  LEU   638     -73.124 -18.855 -11.268  1.00 76.39      B    C
ATOM   4158  CB  LEU   638     -73.332 -20.127 -10.447  1.00 76.34      B    C
ATOM   4159  CG  LEU   638     -72.627 -21.379 -10.965  1.00 77.63      B    C
ATOM   4160  CD1 LEU   638     -73.027 -22.581 -10.120  1.00 77.21      B    C
ATOM   4161  CD2 LEU   638     -73.002 -21.604 -12.420  1.00 76.50      B    C
ATOM   4162  C   LEU   638     -74.195 -17.836 -10.907  1.00 79.19      B    C
ATOM   4163  O   LEU   638     -74.146 -17.221  -9.840  1.00 79.59      B    O
ATOM   4164  N   PRO   639     -75.180 -17.645 -11.797  1.00 81.71      B    N
ATOM   4165  CD  PRO   639     -75.359 -18.404 -13.047  1.00 81.80      B    C
ATOM   4166  CA  PRO   639     -76.228 -16.636 -11.609  1.00 84.07      B    C
ATOM   4167  CB  PRO   639     -76.986 -16.652 -12.936  1.00 83.38      B    C
ATOM   4168  CG  PRO   639     -76.738 -18.011 -13.494  1.00 82.31      B    C
ATOM   4169  C   PRO   639     -77.139 -16.934 -10.421  1.00 86.54      B    C
ATOM   4170  O   PRO   639     -77.156 -18.053  -9.904  1.00 86.12      B    O
ATOM   4171  N   GLY   640     -77.887 -15.921  -9.989  1.00 89.30      B    N
ATOM   4172  CA  GLY   640     -78.889 -16.126  -8.958  1.00 92.85      B    C
ATOM   4173  C   GLY   640     -78.395 -15.864  -7.549  1.00 95.28      B    C
ATOM   4174  O   GLY   640     -78.954 -16.386  -6.583  1.00 95.56      B    O
ATOM   4175  N   THR   641     -77.345 -15.059  -7.426  1.00 97.49      B    N
ATOM   4176  CA  THR   641     -76.803 -14.714  -6.115  1.00 99.35      B    C
ATOM   4177  CB  THR   641     -75.305 -15.069  -6.020  1.00100.06      B    C
ATOM   4178  OG1 THR   641     -75.106 -16.425  -6.444  1.00100.46      B    O
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ATOM   4179  CG2 THR   641     -74.817 -14.922  -4.584  1.00100.75      B    C
ATOM   4180  C   THR   641     -76.969 -13.219  -5.859  1.00 99.93      B    C
ATOM   4181  O   THR   641     -77.280 -12.800  -4.741  1.00100.09      B    O
ATOM   4182  N   SER   642     -76.758 -12.426  -6.907  1.00100.54      B    N
ATOM   4183  CA  SER   642     -76.919 -10.976  -6.847  1.00100.83      B    C
ATOM   4184  CB  SER   642     -78.311 -10.616  -6.311  1.00101.56      B    C
ATOM   4185  OG  SER   642     -79.322 -10.989  -7.233  1.00102.34      B    O
ATOM   4186  C   SER   642     -75.846 -10.293  -6.000  1.00100.09      B    C
ATOM   4187  O   SER   642     -75.262  -9.292  -6.421  1.00100.47      B    O
ATOM   4188  N   HIS   643     -75.587 -10.835  -4.813  1.00 98.31      B    N
ATOM   4189  CA  HIS   643     -74.555 -10.297  -3.931  1.00 95.91      B    C
ATOM   4190  CB  HIS   643     -74.722 -10.862  -2.519  1.00 98.80      B    C
ATOM   4191  CG  HIS   643     -75.936 -10.348  -1.808  1.00102.15      B    C
ATOM   4192  CD2 HIS   643     -76.772 -10.941  -0.923  1.00103.19      B    C
ATOM   4193  ND1 HIS   643     -76.411  -9.064  -1.982  1.00103.40      B    N
ATOM   4194  CE1 HIS   643     -77.485  -8.889  -1.233  1.00103.99      B    C
ATOM   4195  NE2 HIS   643     -77.726 -10.012  -0.581  1.00104.35      B    N
ATOM   4196  C   HIS   643     -73.158 -10.606  -4.463  1.00 92.18      B    C
ATOM   4197  O   HIS   643     -72.247 -10.950  -3.707  1.00 92.08      B    O
ATOM   4198  N   VAL   644     -73.012 -10.481  -5.779  1.00 86.97      B    N
ATOM   4199  CA  VAL   644     -71.728 -10.628  -6.450  1.00 81.49      B    C
ATOM   4200  CB  VAL   644     -71.815 -11.675  -7.583  1.00 81.51      B    C
ATOM   4201  CG1 VAL   644     -70.522 -11.693  -8.383  1.00 80.44      B    C
ATOM   4202  CG2 VAL   644     -72.090 -13.049  -6.993  1.00 81.28      B    C
ATOM   4203  C   VAL   644     -71.298  -9.289  -7.042  1.00 77.33      B    C
ATOM   4204  O   VAL   644     -72.070  -8.629  -7.739  1.00 75.98      B    O
ATOM   4205  N   LEU   645     -70.061  -8.895  -6.756  1.00 72.69      B    N
ATOM   4206  CA  LEU   645     -69.520  -7.632  -7.242  1.00 68.29      B    C
ATOM   4207  CB  LEU   645     -68.409  -7.148  -6.307  1.00 68.02      B    C
ATOM   4208  CG  LEU   645     -68.789  -7.055  -4.827  1.00 67.91      B    C
ATOM   4209  CD1 LEU   645     -67.603  -6.554  -4.015  1.00 67.93      B    C
ATOM   4210  CD2 LEU   645     -69.979  -6.125  -4.668  1.00 67.53      B    C
ATOM   4211  C   LEU   645     -68.971  -7.801  -8.657  1.00 65.15      B    C
ATOM   4212  O   LEU   645     -68.985  -6.864  -9.457  1.00 64.28      B    O
ATOM   4213  N   GLY   646     -68.493  -9.006  -8.957  1.00 61.10      B    N
ATOM   4214  CA  GLY   646     -67.971  -9.289 -10.280  1.00 56.54      B    C
ATOM   4215  C   GLY   646     -66.980 -10.434 -10.276  1.00 53.72      B    C
ATOM   4216  O   GLY   646     -66.789 -11.101  -9.259  1.00 53.37      B    O
ATOM   4217  N   ALA   647     -66.342 -10.665 -11.417  1.00 50.95      B    N
ATOM   4218  CA  ALA   647     -65.407 -11.776 -11.555  1.00 47.43      B    C
ATOM   4219  CB  ALA   647     -66.143 -13.011 -12.073  1.00 46.90      B    C
ATOM   4220  C   ALA   647     -64.276 -11.404 -12.510  1.00 45.07      B    C
ATOM   4221  O   ALA   647     -64.484 -10.664 -13.471  1.00 45.31      B    O
ATOM   4222  N   TYR   648     -63.081 -11.918 -12.243  1.00 41.18      B    N
ATOM   4223  CA  TYR   648     -61.950 -11.701 -13.132  1.00 40.43      B    C
ATOM   4224  CB  TYR   648     -61.315 -10.324 -12.880  1.00 38.89      B    C
ATOM   4225  CG  TYR   648     -61.108  -9.998 -11.418  1.00 37.05      B    C
ATOM   4226  CD1 TYR   648     -59.993 -10.455 -10.733  1.00 37.52      B    C
ATOM   4227  CE1 TYR   648     -59.825 -10.189  -9.381  1.00 37.90      B    C
ATOM   4228  CD2 TYR   648     -62.051  -9.262 -10.714  1.00 37.16      B    C
ATOM   4229  CE2 TYR   648     -61.891  -8.992  -9.370  1.00 38.07      B    C
ATOM   4230  CZ  TYR   648     -60.778  -9.460  -8.708  1.00 37.64      B    C
ATOM   4231  OH  TYR   648     -60.630  -9.197  -7.362  1.00 40.14      B    O
ATOM   4232  C   TYR   648     -60.905 -12.786 -12.953  1.00 40.67      B    C
ATOM   4233  O   TYR   648     -60.817 -13.412 -11.896  1.00 40.70      B    O
ATOM   4234  N   ALA   649     -60.112 -13.001 -13.995  1.00 40.21      B    N
ATOM   4235  CA  ALA   649     -59.012 -13.949 -13.936  1.00 40.94      B    C
ATOM   4236  CB  ALA   649     -58.743 -14.513 -15.329  1.00 40.44      B    C
ATOM   4237  C   ALA   649     -57.755 -13.273 -13.395  1.00 41.98      B    C
ATOM   4238  O   ALA   649     -57.403 -12.169 -13.813  1.00 42.47      B    O
ATOM   4239  N   VAL   650     -57.089 -13.942 -12.460  1.00 41.96      B    N
ATOM   4240  CA  VAL   650     -55.743 -13.576 -12.056  1.00 41.03      B    C
ATOM   4241  CB  VAL   650     -55.659 -13.331 -10.528  1.00 41.39      B    C
ATOM   4242  CG1 VAL   650     -54.239 -12.904 -10.141  1.00 36.26      B    C
ATOM   4243  CG2 VAL   650     -56.675 -12.274 -10.115  1.00 38.03      B    C
ATOM   4244  C   VAL   650     -54.814 -14.728 -12.429  1.00 42.88      B    C
ATOM   4245  O   VAL   650     -54.775 -15.751 -11.746  1.00 43.57      B    O
ATOM   4246  N   ASP   651     -54.068 -14.555 -13.514  1.00 45.00      B    N
ATOM   4247  CA  ASP   651     -53.278 -15.641 -14.084  1.00 47.26      B    C
ATOM   4248  CB  ASP   651     -52.219 -16.108 -13.086  1.00 50.04      B    C
ATOM   4249  CG  ASP   651     -51.177 -17.014 -13.721  1.00 55.64      B    C
ATOM   4250  OD1 ASP   651     -51.113 -17.076 -14.973  1.00 57.69      B    O
ATOM   4251  OD2 ASP   651     -50.420 -17.664 -12.965  1.00 57.35      B    O
ATOM   4252  C   ASP   651     -54.206 -16.803 -14.451  1.00 47.02      B    C
ATOM   4253  O   ASP   651     -55.093 -16.645 -15.288  1.00 45.87      B    O
ATOM   4254  N   ASN   652     -54.010 -17.959 -13.821  1.00 46.56      B    N
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ATOM   4255  CA  ASN   652     -54.874 -19.113 -14.064  1.00 47.62      B    C
ATOM   4256  CB  ASN   652     -54.041 -20.381 -14.269  1.00 46.87      B    C
ATOM   4257  CG  ASN   652     -53.552 -20.527 -15.695  1.00 48.35      B    C
ATOM   4258  OD1 ASN   652     -54.179 -20.029 -16.633  1.00 47.24      B    O
ATOM   4259  ND2 ASN   652     -52.426 -21.207 -15.869  1.00 49.09      B    N
ATOM   4260  C   ASN   652     -55.900 -19.366 -12.969  1.00 47.56      B    C
ATOM   4261  O   ASN   652     -56.470 -20.453 -12.895  1.00 48.79      B    O
ATOM   4262  N   THR   653     -56.140 -18.374 -12.118  1.00 46.14      B    N
ATOM   4263  CA  THR   653     -57.173 -18.506 -11.102  1.00 44.77      B    C
ATOM   4264  CB  THR   653     -56.648 -18.136  -9.704  1.00 44.11      B    C
ATOM   4265  OG1 THR   653     -55.569 -19.011  -9.353  1.00 44.54      B    O
ATOM   4266  CG2 THR   653     -57.760 -18.266  -8.670  1.00 42.08      B    C
ATOM   4267  C   THR   653     -58.366 -17.622 -11.416  1.00 46.06      B    C
ATOM   4268  O   THR   653     -58.213 -16.455 -11.769  1.00 46.42      B    O
ATOM   4269  N   CYS   654     -59.556 -18.191 -11.288  1.00 46.34      B    N
ATOM   4270  CA  CYS   654     -60.790 -17.449 -11.481  1.00 47.21      B    C
ATOM   4271  C   CYS   654     -61.240 -16.909 -10.132  1.00 47.79      B    C
ATOM   4272  O   CYS   654     -61.341 -17.657  -9.161  1.00 48.70      B    O
ATOM   4273  CB  CYS   654     -61.857 -18.375 -12.065  1.00 47.10      B    C
ATOM   4274  SG  CYS   654     -63.519 -17.664 -12.264  1.00 49.57      B    S
ATOM   4275  N   VAL   655     -61.502 -15.609 -10.074  1.00 47.25      B    N
ATOM   4276  CA  VAL   655     -61.840 -14.952  -8.821  1.00 46.56      B    C
ATOM   4277  CB  VAL   655     -60.806 -13.854  -8.478  1.00 46.21      B    C
ATOM   4278  CG1 VAL   655     -61.252 -13.070  -7.252  1.00 45.65      B    C
ATOM   4279  CG2 VAL   655     -59.449 -14.483  -8.231  1.00 43.82      B    C
ATOM   4280  C   VAL   655     -63.221 -14.326  -8.914  1.00 48.25      B    C
ATOM   4281  O   VAL   655     -63.492 -13.520  -9.804  1.00 48.62      B    O
ATOM   4282  N   VAL   656     -64.098 -14.710  -7.995  1.00 50.22      B    N
ATOM   4283  CA  VAL   656     -65.419 -14.105  -7.906  1.00 52.83      B    C
ATOM   4284  CB  VAL   656     -66.527 -15.182  -7.912  1.00 52.93      B    C
ATOM   4285  CG1 VAL   656     -67.889 -14.530  -7.732  1.00 51.33      B    C
ATOM   4286  CG2 VAL   656     -66.485 -15.959  -9.227  1.00 50.98      B    C
ATOM   4287  C   VAL   656     -65.512 -13.288  -6.621  1.00 55.73      B    C
ATOM   4288  O   VAL   656     -65.155 -13.767  -5.544  1.00 55.45      B    O
ATOM   4289  N   ARG   657     -65.984 -12.051  -6.742  1.00 58.13      B    N
ATOM   4290  CA  ARG   657     -66.028 -11.146  -5.602  1.00 62.52      B    C
ATOM   4291  CB  ARG   657     -65.441  -9.786  -5.988  1.00 61.88      B    C
ATOM   4292  CG  ARG   657     -63.976  -9.841  -6.376  1.00 61.18      B    C
ATOM   4293  CD  ARG   657     -63.099 -10.001  -5.152  1.00 61.37      B    C
ATOM   4294  NE  ARG   657     -63.292  -8.886  -4.232  1.00 61.93      B    N
ATOM   4295  CZ  ARG   657     -62.779  -7.674  -4.415  1.00 63.19      B    C
ATOM   4296  NH1 ARG   657     -63.010  -6.715  -3.527  1.00 63.51      B    N
ATOM   4297  NH2 ARG   657     -62.032  -7.419  -5.484  1.00 62.31      B    N
ATOM   4298  C   ARG   657     -67.446 -10.964  -5.082  1.00 65.59      B    C
ATOM   4299  O   ARG   657     -68.333 -10.523  -5.811  1.00 65.58      B    O
ATOM   4300  N   SER   658     -67.647 -11.305  -3.813  1.00 70.15      B    N
ATOM   4301  CA  SER   658     -68.945 -11.149  -3.162  1.00 75.05      B    C
ATOM   4302  CB  SER   658     -69.352 -12.461  -2.488  1.00 75.03      B    C
ATOM   4303  OG  SER   658     -68.362 -12.879  -1.561  1.00 76.50      B    O
ATOM   4304  C   SER   658     -68.876 -10.036  -2.118  1.00 77.90      B    C
ATOM   4305  O   SER   658     -67.807  -9.754  -1.574  1.00 77.97      B    O
ATOM   4306  N   ARG   659     -70.014  -9.409  -1.837  1.00 81.25      B    N
ATOM   4307  CA  ARG   659     -70.058  -8.343  -0.843  1.00 84.24      B    C
ATOM   4308  CB  ARG   659     -71.156  -7.333  -1.185  1.00 86.82      B    C
ATOM   4309  CG  ARG   659     -71.021  -6.010  -0.441  1.00 90.54      B    C
ATOM   4310  CD  ARG   659     -72.248  -5.131  -0.625  1.00 93.57      B    C
ATOM   4311  NE  ARG   659     -73.441  -5.738  -0.040  1.00 96.92      B    N
ATOM   4312  CZ  ARG   659     -74.593  -5.100   0.150  1.00 98.47      B    C
ATOM   4313  NH1 ARG   659     -74.716  -3.824  -0.199  1.00 98.24      B    N
ATOM   4314  NH2 ARG   659     -75.624  -5.739   0.691  1.00 99.04      B    N
ATOM   4315  C   ARG   659     -70.303  -8.910   0.551  1.00 84.43      B    C
ATOM   4316  O   ARG   659     -69.628  -8.534   1.510  1.00 85.18      B    O
ATOM   4317  N   ALA   671     -74.537 -18.439  -0.545  1.00 74.52      B    N
ATOM   4318  CA  ALA   671     -73.500 -19.241  -1.186  1.00 75.31      B    C
ATOM   4319  CB  ALA   671     -73.891 -20.711  -1.157  1.00 75.29      B    C
ATOM   4320  C   ALA   671     -73.234 -18.801  -2.628  1.00 75.10      B    C
ATOM   4321  O   ALA   671     -74.154 -18.416  -3.357  1.00 76.03      B    O
ATOM   4322  N   VAL   672     -71.970 -18.867  -3.035  1.00 73.34      B    N
ATOM   4323  CA  VAL   672     -71.565 -18.405  -4.359  1.00 70.84      B    C
ATOM   4324  CB  VAL   672     -70.845 -17.046  -4.262  1.00 71.44      B    C
ATOM   4325  CG1 VAL   672     -70.430 -16.578  -5.642  1.00 71.15      B    C
ATOM   4326  CG2 VAL   672     -71.759 -16.022  -3.605  1.00 70.69      B    C
ATOM   4327  C   VAL   672     -70.637 -19.410  -5.044  1.00 68.72      B    C
ATOM   4328  O   VAL   672     -69.829 -20.069  -4.385  1.00 68.45      B    O
ATOM   4329  N   THR   673     -70.760 -19.527  -6.364  1.00 65.32      B    N
ATOM   4330  CA  THR   673     -69.944 -20.476  -7.114  1.00 62.53      B    C
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ATOM   4331  CB  THR   673     -70.817 -21.586  -7.725  1.00 63.63      B    C
ATOM   4332  OG1 THR   673     -71.524 -22.264  -6.679  1.00 64.64      B    O
ATOM   4333  CG2 THR   673     -69.952 -22.590  -8.473  1.00 62.74      B    C
ATOM   4334  C   THR   673     -69.132 -19.821  -8.231  1.00 59.50      B    C
ATOM   4335  O   THR   673     -69.671 -19.105  -9.077  1.00 58.78      B    O
ATOM   4336  N   ALA   674     -67.830 -20.080  -8.221  1.00 56.52      B    N
ATOM   4337  CA  ALA   674     -66.935 -19.595  -9.264  1.00 54.91      B    C
ATOM   4338  CB  ALA   674     -65.567 -19.269  -8.666  1.00 53.50      B    C
ATOM   4339  C   ALA   674     -66.790 -20.634 -10.379  1.00 53.38      B    C
ATOM   4340  O   ALA   674     -66.506 -21.809 -10.121  1.00 52.02      B    O
ATOM   4341  N   VAL   675     -66.974 -20.186 -11.616  1.00 50.64      B    N
ATOM   4342  CA  VAL   675     -66.941 -21.069 -12.776  1.00 49.05      B    C
ATOM   4343  CB  VAL   675     -68.256 -20.961 -13.583  1.00 48.94      B    C
ATOM   4344  CG1 VAL   675     -68.282 -22.007 -14.685  1.00 46.82      B    C
ATOM   4345  CG2 VAL   675     -69.448 -21.114 -12.653  1.00 47.81      B    C
ATOM   4346  C   VAL   675     -65.778 -20.709 -13.701  1.00 47.76      B    C
ATOM   4347  O   VAL   675     -65.758 -19.629 -14.291  1.00 47.79      B    O
ATOM   4348  N   ALA   676     -64.817 -21.619 -13.828  1.00 46.75      B    N
ATOM   4349  CA  ALA   676     -63.688 -21.429 -14.736  1.00 45.42      B    C
ATOM   4350  CB  ALA   676     -62.389 -21.792 -14.037  1.00 43.18      B    C
ATOM   4351  C   ALA   676     -63.840 -22.275 -15.996  1.00 46.23      B    C
ATOM   4352  O   ALA   676     -64.236 -23.440 -15.932  1.00 47.47      B    O
ATOM   4353  N   ILE   677     -63.518 -21.687 -17.142  1.00 45.06      B    N
ATOM   4354  CA  ILE   677     -63.322 -22.462 -18.358  1.00 42.84      B    C
ATOM   4355  CB  ILE   677     -64.044 -21.805 -19.559  1.00 41.75      B    C
ATOM   4356  CG2 ILE   677     -63.786 -22.593 -20.834  1.00 38.64      B    C
ATOM   4357  CG1 ILE   677     -65.548 -21.746 -19.287  1.00 41.12      B    C
ATOM   4358  CD1 ILE   677     -66.349 -21.146 -20.430  1.00 42.32      B    C
ATOM   4359  C   ILE   677     -61.824 -22.534 -18.622  1.00 42.86      B    C
ATOM   4360  O   ILE   677     -61.159 -21.508 -18.733  1.00 43.27      B    O
ATOM   4361  N   CYS   678     -61.303 -23.754 -18.701  1.00 44.51      B    N
ATOM   4362  CA  CYS   678     -59.877 -24.001 -18.896  1.00 46.16      B    C
ATOM   4363  C   CYS   678     -59.656 -24.664 -20.248  1.00 46.08      B    C
ATOM   4364  O   CYS   678     -60.392 -25.574 -20.615  1.00 46.07      B    O
ATOM   4365  CB  CYS   678     -59.346 -24.930 -17.800  1.00 48.42      B    C
ATOM   4366  SG  CYS   678     -59.691 -24.383 -16.096  1.00 55.45      B    S
ATOM   4367  N   CYS   679     -58.641 -24.221 -20.981  1.00 46.30      B    N
ATOM   4368  CA  CYS   679     -58.335 -24.816 -22.273  1.00 48.35      B    C
ATOM   4369  C   CYS   679     -56.863 -25.140 -22.441  1.00 50.02      B    C
ATOM   4370  O   CYS   679     -56.021 -24.723 -21.646  1.00 49.93      B    O
ATOM   4371  CB  CYS   679     -58.737 -23.893 -23.415  1.00 47.56      B    C
ATOM   4372  SG  CYS   679     -60.399 -23.172 -23.340  1.00 48.97      B    S
ATOM   4373  N   ARG   680     -56.574 -25.885 -23.501  1.00 52.89      B    N
ATOM   4374  CA  ARG   680     -55.214 -26.136 -23.944  1.00 57.75      B    C
ATOM   4375  CB  ARG   680     -54.573 -27.236 -23.100  1.00 58.25      B    C
ATOM   4376  CG  ARG   680     -55.435 -28.470 -22.933  1.00 61.86      B    C
ATOM   4377  CD  ARG   680     -54.577 -29.715 -22.813  1.00 64.43      B    C
ATOM   4378  NE  ARG   680     -55.302 -30.826 -22.205  1.00 68.80      B    N
ATOM   4379  CZ  ARG   680     -54.806 -32.052 -22.065  1.00 70.93      B    C
ATOM   4380  NH1 ARG   680     -55.532 -33.006 -21.497  1.00 71.39      B    N
ATOM   4381  NH2 ARG   680     -53.583 -32.327 -22.501  1.00 73.17      B    N
ATOM   4382  C   ARG   680     -55.261 -26.561 -25.404  1.00 60.89      B    C
ATOM   4383  O   ARG   680     -56.339 -26.741 -25.970  1.00 59.44      B    O
ATOM   4384  N   SER   681     -54.093 -26.704 -26.017  1.00 66.22      B    N
ATOM   4385  CA  SER   681     -54.003 -27.243 -27.367  1.00 72.84      B    C
ATOM   4386  CB  SER   681     -53.377 -26.219 -28.317  1.00 73.28      B    C
ATOM   4387  OG  SER   681     -54.177 -25.056 -28.429  1.00 75.41      B    O
ATOM   4388  C   SER   681     -53.148 -28.501 -27.357  1.00 76.77      B    C
ATOM   4389  O   SER   681     -51.946 -28.435 -27.096  1.00 77.43      B    O
ATOM   4390  N   ARG   682     -53.764 -29.645 -27.644  1.00 81.26      B    N
ATOM   4391  CA  ARG   682     -53.031 -30.905 -27.694  1.00 85.36      B    C
ATOM   4392  CB  ARG   682     -54.005 -32.087 -27.634  1.00 88.32      B    C
ATOM   4393  CG  ARG   682     -54.534 -32.394 -26.237  1.00 92.63      B    C
ATOM   4394  CD  ARG   682     -55.114 -33.804 -26.167  1.00 96.94      B    C
ATOM   4395  NE  ARG   682     -54.231 -34.789 -26.789  1.00100.46      B    N
ATOM   4396  CZ  ARG   682     -54.568 -36.052 -27.043  1.00102.13      B    C
ATOM   4397  NH1 ARG   682     -53.691 -36.869 -27.616  1.00102.64      B    N
ATOM   4398  NH2 ARG   682     -55.777 -36.500 -26.724  1.00102.84      B    N
ATOM   4399  C   ARG   682     -52.165 -31.008 -28.953  1.00 86.02      B    C
ATOM   4400  O   ARG   682     -52.319 -30.158 -29.860  1.00 85.88      B    O
ATOM   4401  OXT ARG   682     -51.337 -31.944 -29.016  1.00 86.99      B    O
TER    4402       ARG   682                                             B
ATOM   4403  CB  GLU     1     -36.231  38.731   6.129  1.00 73.54      L    C
ATOM   4404  CG  GLU     1     -35.182  39.159   5.116  1.00 77.83      L    C
ATOM   4405  CD  GLU     1     -33.792  39.221   5.713  1.00 80.96      L    C
ATOM   4406  OE1 GLU     1     -33.555  38.539   6.736  1.00 81.61      L    O
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ATOM   4407  OE2 GLU     1     -32.939  39.951   5.159  1.00 81.99      L     O
ATOM   4408  C   GLU     1     -37.606  37.144   4.782  1.00 68.14      L     C
ATOM   4409  O   GLU     1     -36.842  36.943   3.836  1.00 68.19      L     O
ATOM   4410  N   GLU     1     -38.659  38.513   6.573  1.00 71.43      L     N
ATOM   4411  CA  GLU     1     -37.610  38.484   5.515  1.00 70.62      L     C
ATOM   4412  N   SER     2     -38.458  36.226   5.230  1.00 64.55      L     N
ATOM   4413  CA  SER     2     -38.645  34.953   4.540  1.00 60.66      L     C
ATOM   4414  CB  SER     2     -39.040  33.862   5.545  1.00 60.92      L     C
ATOM   4415  OG  SER     2     -40.188  34.231   6.293  1.00 59.32      L     O
ATOM   4416  C   SER     2     -39.713  35.079   3.450  1.00 57.06      L     C
ATOM   4417  O   SER     2     -40.693  35.810   3.607  1.00 55.88      L     O
ATOM   4418  N   VAL     3     -39.514  34.364   2.346  1.00 52.88      L     N
ATOM   4419  CA  VAL     3     -40.437  34.408   1.212  1.00 48.89      L     C
ATOM   4420  CB  VAL     3     -39.850  33.648  -0.013  1.00 49.36      L     C
ATOM   4421  CG1 VAL     3     -40.818  33.703  -1.170  1.00 49.74      L     C
ATOM   4422  CG2 VAL     3     -38.519  34.253  -0.420  1.00 48.94      L     C
ATOM   4423  C   VAL     3     -41.798  33.801   1.562  1.00 45.34      L     C
ATOM   4424  O   VAL     3     -42.831  34.242   1.057  1.00 46.42      L     O
ATOM   4425  N   LEU     4     -41.796  32.783   2.419  1.00 40.20      L     N
ATOM   4426  CA  LEU     4     -43.039  32.204   2.919  1.00 36.80      L     C
ATOM   4427  CB  LEU     4     -42.943  30.675   2.932  1.00 35.15      L     C
ATOM   4428  CG  LEU     4     -42.440  30.024   1.639  1.00 35.77      L     C
ATOM   4429  CD1 LEU     4     -42.428  28.516   1.799  1.00 33.82      L     C
ATOM   4430  CD2 LEU     4     -43.339  30.424   0.473  1.00 33.23      L     C
ATOM   4431  C   LEU     4     -43.312  32.723   4.330  1.00 34.95      L     C
ATOM   4432  O   LEU     4     -42.414  32.790   5.167  1.00 34.99      L     O
ATOM   4433  N   THR     5     -44.554  33.096   4.599  1.00 34.09      L     N
ATOM   4434  CA  THR     5     -44.870  33.701   5.880  1.00 33.56      L     C
ATOM   4435  CB  THR     5     -45.693  34.989   5.686  1.00 34.89      L     C
ATOM   4436  OG1 THR     5     -44.944  35.912   4.883  1.00 36.65      L     O
ATOM   4437  CG2 THR     5     -45.998  35.636   7.037  1.00 33.40      L     C
ATOM   4438  C   THR     5     -45.637  32.749   6.790  1.00 33.35      L     C
ATOM   4439  O   THR     5     -46.701  32.250   6.421  1.00 33.73      L     O
ATOM   4440  N   GLN     6     -45.088  32.508   7.979  1.00 32.27      L     N
ATOM   4441  CA  GLN     6     -45.755  31.719   9.014  1.00 32.42      L     C
ATOM   4442  CB  GLN     6     -44.886  30.527   9.440  1.00 31.42      L     C
ATOM   4443  CG  GLN     6     -44.498  29.545   8.353  1.00 29.42      L     C
ATOM   4444  CD  GLN     6     -43.610  28.432   8.891  1.00 29.99      L     C
ATOM   4445  OE1 GLN     6     -42.530  28.172   8.362  1.00 30.78      L     O
ATOM   4446  NE2 GLN     6     -44.061  27.775   9.956  1.00 26.07      L     N
ATOM   4447  C   GLN     6     -45.959  32.603  10.241  1.00 33.06      L     C
ATOM   4448  O   GLN     6     -45.203  33.544  10.462  1.00 33.60      L     O
ATOM   4449  N   PRO     7     -46.963  32.293  11.074  1.00 32.74      L     N
ATOM   4450  CD  PRO     7     -48.008  31.265  10.922  1.00 32.27      L     C
ATOM   4451  CA  PRO     7     -47.036  32.979  12.369  1.00 33.15      L     C
ATOM   4452  CB  PRO     7     -48.356  32.492  12.963  1.00 32.34      L     C
ATOM   4453  CG  PRO     7     -48.581  31.147  12.312  1.00 33.16      L     C
ATOM   4454  C   PRO     7     -45.835  32.600  13.241  1.00 33.91      L     C
ATOM   4455  O   PRO     7     -45.385  31.457  13.237  1.00 34.46      L     O
ATOM   4456  N   PRO     8     -45.295  33.564  13.994  1.00 35.09      L     N
ATOM   4457  CD  PRO     8     -45.722  34.973  14.069  1.00 34.70      L     C
ATOM   4458  CA  PRO     8     -44.112  33.292  14.825  1.00 34.71      L     C
ATOM   4459  CB  PRO     8     -43.814  34.640  15.494  1.00 36.39      L     C
ATOM   4460  CG  PRO     8     -44.501  35.661  14.617  1.00 38.46      L     C
ATOM   4461  C   PRO     8     -44.371  32.196  15.858  1.00 33.60      L     C
ATOM   4462  O   PRO     8     -43.480  31.418  16.188  1.00 33.87      L     O
ATOM   4463  N   SER     9     -45.591  32.131  16.373  1.00 32.78      L     N
ATOM   4464  CA  SER     9     -45.886  31.153  17.409  1.00 34.68      L     C
ATOM   4465  CB  SER     9     -45.491  31.713  18.776  1.00 36.06      L     C
ATOM   4466  OG  SER     9     -46.262  32.861  19.072  1.00 40.67      L     O
ATOM   4467  C   SER     9     -47.349  30.732  17.439  1.00 32.15      L     C
ATOM   4468  O   SER     9     -48.225  31.463  16.988  1.00 33.49      L     O
ATOM   4469  N   VAL    10     -47.598  29.540  17.967  1.00 29.27      L     N
ATOM   4470  CA  VAL    10     -48.952  29.078  18.237  1.00 28.93      L     C
ATOM   4471  CB  VAL    10     -49.503  28.157  17.101  1.00 29.21      L     C
ATOM   4472  CG1 VAL    10     -49.559  28.921  15.784  1.00 32.11      L     C
ATOM   4473  CG2 VAL    10     -48.621  26.931  16.952  1.00 29.17      L     C
ATOM   4474  C   VAL    10     -48.888  28.271  19.513  1.00 28.40      L     C
ATOM   4475  O   VAL    10     -47.809  27.826  19.925  1.00 29.78      L     O
ATOM   4476  N   SER    11     -50.035  28.067  20.143  1.00 27.75      L     N
ATOM   4477  CA  SER    11     -50.049  27.307  21.377  1.00 30.00      L     C
ATOM   4478  CB  SER    11     -49.688  28.225  22.550  1.00 30.66      L     C
ATOM   4479  OG  SER    11     -50.592  29.314  22.626  1.00 33.85      L     O
ATOM   4480  C   SER    11     -51.397  26.652  21.621  1.00 27.91      L     C
ATOM   4481  O   SER    11     -52.418  27.101  21.105  1.00 27.57      L     O
ATOM   4482  N   GLY    12     -51.381  25.578  22.404  1.00 27.56      L     N
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ATOM	4483	CA	GLY	12	-52.605	24.933	22.836	1.00	25.58	L C
ATOM	4484	C	GLY	12	-52.322	24.003	24.004	1.00	27.45	L C
ATOM	4485	O	GLY	12	-51.165	23.668	24.271	1.00	26.91	L O
ATOM	4486	N	ALA	13	-53.375	23.593	24.706	1.00	26.20	L N
ATOM	4487	CA	ALA	13	-53.259	22.596	25.762	1.00	27.69	L C
ATOM	4488	CB	ALA	13	-54.372	22.804	26.804	1.00	27.24	L C
ATOM	4489	C	ALA	13	-53.345	21.186	25.171	1.00	26.76	L C
ATOM	4490	O	ALA	13	-53.861	20.992	24.071	1.00	27.16	L O
ATOM	4491	N	PRO	14	-52.839	20.182	25.900	1.00	26.62	L N
ATOM	4492	CD	PRO	14	-52.181	20.255	27.219	1.00	26.21	L C
ATOM	4493	CA	PRO	14	-52.938	18.803	25.408	1.00	25.50	L C
ATOM	4494	CB	PRO	14	-52.425	17.965	26.587	1.00	27.17	L C
ATOM	4495	CG	PRO	14	-51.520	18.906	27.343	1.00	24.03	L C
ATOM	4496	C	PRO	14	-54.382	18.467	25.046	1.00	26.24	L C
ATOM	4497	O	PRO	14	-55.303	18.750	25.816	1.00	25.55	L O
ATOM	4498	N	GLY	15	-54.575	17.885	23.864	1.00	25.21	L N
ATOM	4499	CA	GLY	15	-55.907	17.508	23.432	1.00	25.03	L C
ATOM	4500	C	GLY	15	-56.561	18.482	22.464	1.00	26.75	L C
ATOM	4501	O	GLY	15	-57.538	18.137	21.794	1.00	28.23	L O
ATOM	4502	N	GLN	16	-56.037	19.700	22.382	1.00	25.53	L N
ATOM	4503	CA	GLN	16	-56.621	20.711	21.502	1.00	25.79	L C
ATOM	4504	CB	GLN	16	-56.273	22.122	22.001	1.00	25.68	L C
ATOM	4505	CG	GLN	16	-56.942	22.481	23.327	1.00	27.59	L C
ATOM	4506	CD	GLN	16	-56.922	23.976	23.606	1.00	30.78	L C
ATOM	4507	OE1	GLN	16	-55.867	24.552	23.878	1.00	30.95	L O
ATOM	4508	NE2	GLN	16	-58.094	24.613	23.540	1.00	27.50	L N
ATOM	4509	C	GLN	16	-56.155	20.548	20.064	1.00	25.94	L C
ATOM	4510	O	GLN	16	-55.245	19.772	19.772	1.00	24.98	L O
ATOM	4511	N	ARG	17	-56.798	21.276	19.161	1.00	28.78	L N
ATOM	4512	CA	ARG	17	-56.407	21.283	17.756	1.00	29.05	L C
ATOM	4513	CB	ARG	17	-57.628	20.990	16.876	1.00	31.19	L C
ATOM	4514	CG	ARG	17	-57.375	21.121	15.385	1.00	32.39	L C
ATOM	4515	CD	ARG	17	-58.629	20.818	14.577	1.00	32.91	L C
ATOM	4516	NE	ARG	17	-58.384	20.933	13.140	1.00	36.49	L N
ATOM	4517	CZ	ARG	17	-58.443	22.079	12.466	1.00	39.15	L C
ATOM	4518	NH1	ARG	17	-58.737	23.210	13.098	1.00	40.18	L N
ATOM	4519	NH2	ARG	17	-58.214	22.101	11.160	1.00	39.44	L N
ATOM	4520	C	ARG	17	-55.853	22.661	17.430	1.00	29.77	L C
ATOM	4521	O	ARG	17	-56.492	23.674	17.716	1.00	30.44	L O
ATOM	4522	N	VAL	18	-54.664	22.708	16.845	1.00	28.97	L N
ATOM	4523	CA	VAL	18	-54.095	23.984	16.439	1.00	30.60	L C
ATOM	4524	CB	VAL	18	-52.847	24.339	17.288	1.00	32.96	L C
ATOM	4525	CG1	VAL	18	-53.234	24.451	18.756	1.00	32.49	L C
ATOM	4526	CG2	VAL	18	-51.771	23.274	17.108	1.00	34.57	L C
ATOM	4527	C	VAL	18	-53.706	23.936	14.967	1.00	30.86	L C
ATOM	4528	O	VAL	18	-53.442	22.869	14.418	1.00	31.31	L O
ATOM	4529	N	THR	19	-53.680	25.093	14.322	1.00	30.68	L N
ATOM	4530	CA	THR	19	-53.253	25.153	12.937	1.00	30.55	L C
ATOM	4531	CB	THR	19	-54.419	25.572	12.003	1.00	33.05	L C
ATOM	4532	OG1	THR	19	-54.922	26.852	12.412	1.00	37.51	L O
ATOM	4533	CG2	THR	19	-55.549	24.544	12.057	1.00	30.05	L C
ATOM	4534	C	THR	19	-52.109	26.140	12.772	1.00	30.41	L C
ATOM	4535	O	THR	19	-51.977	27.094	13.535	1.00	31.46	L O
ATOM	4536	N	ILE	20	-51.282	25.893	11.766	1.00	30.36	L N
ATOM	4537	CA	ILE	20	-50.173	26.767	11.430	1.00	28.18	L C
ATOM	4538	CB	ILE	20	-48.827	26.063	11.700	1.00	28.17	L C
ATOM	4539	CG2	ILE	20	-47.670	26.922	11.207	1.00	24.45	L C
ATOM	4540	CG1	ILE	20	-48.706	25.749	13.199	1.00	30.05	L C
ATOM	4541	CD1	ILE	20	-47.458	24.962	13.567	1.00	27.37	L C
ATOM	4542	C	ILE	20	-50.295	27.064	9.944	1.00	31.43	L C
ATOM	4543	O	ILE	20	-50.325	26.142	9.119	1.00	31.91	L O
ATOM	4544	N	SER	21	-50.375	28.344	9.600	1.00	31.04	L N
ATOM	4545	CA	SER	21	-50.526	28.735	8.206	1.00	31.99	L C
ATOM	4546	CB	SER	21	-51.455	29.946	8.086	1.00	32.54	L C
ATOM	4547	OG	SER	21	-50.847	31.097	8.642	1.00	34.59	L O
ATOM	4548	C	SER	21	-49.187	29.064	7.567	1.00	32.68	L C
ATOM	4549	O	SER	21	-48.208	29.381	8.248	1.00	32.74	L O
ATOM	4550	N	CYS	22	-49.159	28.979	6.245	1.00	33.22	L N
ATOM	4551	CA	CYS	22	-47.970	29.269	5.456	1.00	35.47	L C
ATOM	4552	C	CYS	22	-48.488	29.994	4.222	1.00	36.21	L C
ATOM	4553	O	CYS	22	-49.257	29.423	3.447	1.00	37.64	L O
ATOM	4554	CB	CYS	22	-47.295	27.956	5.053	1.00	33.85	L C
ATOM	4555	SG	CYS	22	-45.777	28.046	4.037	1.00	40.59	L S
ATOM	4556	N	THR	23	-48.099	31.248	4.033	1.00	35.52	L N
ATOM	4557	CA	THR	23	-48.563	31.957	2.849	1.00	36.01	L C
ATOM	4558	CB	THR	23	-49.375	33.215	3.218	1.00	36.77	L C

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ATOM   4559  OG1 THR  23     -48.493  34.218   3.725  1.00 43.95      L     O
ATOM   4560  CG2 THR  23     -50.408  32.888   4.285  1.00 35.35      L     C
ATOM   4561  C   THR  23     -47.399  32.358   1.953  1.00 35.25      L     C
ATOM   4562  O   THR  23     -46.386  32.893   2.418  1.00 33.54      L     O
ATOM   4563  N   GLY  24     -47.549  32.077   0.663  1.00 33.91      L     N
ATOM   4564  CA  GLY  24     -46.526  32.434  -0.295  1.00 34.67      L     C
ATOM   4565  C   GLY  24     -47.058  33.355  -1.373  1.00 35.72      L     C
ATOM   4566  O   GLY  24     -47.847  34.259  -1.100  1.00 35.18      L     O
ATOM   4567  N   SER  25     -46.622  33.120  -2.604  1.00 36.22      L     N
ATOM   4568  CA  SER  25     -46.957  33.996  -3.717  1.00 38.10      L     C
ATOM   4569  CB  SER  25     -45.879  35.067  -3.880  1.00 36.60      L     C
ATOM   4570  OG  SER  25     -44.723  34.513  -4.495  1.00 38.31      L     O
ATOM   4571  C   SER  25     -47.065  33.195  -5.012  1.00 38.80      L     C
ATOM   4572  O   SER  25     -46.973  31.967  -5.011  1.00 37.63      L     O
ATOM   4573  N   SER  26     -47.240  33.909  -6.118  1.00 39.46      L     N
ATOM   4574  CA  SER  26     -47.413  33.284  -7.425  1.00 39.78      L     C
ATOM   4575  CB  SER  26     -47.955  34.309  -8.423  1.00 40.90      L     C
ATOM   4576  OG  SER  26     -47.059  35.407  -8.537  1.00 42.25      L     O
ATOM   4577  C   SER  26     -46.113  32.699  -7.966  1.00 38.37      L     C
ATOM   4578  O   SER  26     -46.125  31.988  -8.965  1.00 40.32      L     O
ATOM   4579  N   SER  27     -44.988  33.000  -7.325  1.00 37.56      L     N
ATOM   4580  CA  SER  27     -43.725  32.405  -7.756  1.00 36.90      L     C
ATOM   4581  CB  SER  27     -42.586  33.423  -7.636  1.00 37.67      L     C
ATOM   4582  OG  SER  27     -42.376  33.797  -6.290  1.00 46.23      L     O
ATOM   4583  C   SER  27     -43.359  31.119  -7.003  1.00 34.65      L     C
ATOM   4584  O   SER  27     -42.387  30.450  -7.356  1.00 34.64      L     O
ATOM   4585  N   ASN  28     -44.126  30.766  -5.972  1.00 32.35      L     N
ATOM   4586  CA  ASN  28     -43.899  29.493  -5.288  1.00 31.77      L     C
ATOM   4587  CB  ASN  28     -43.209  29.711  -3.930  1.00 29.14      L     C
ATOM   4588  CG  ASN  28     -43.767  30.891  -3.162  1.00 29.35      L     C
ATOM   4589  OD1 ASN  28     -44.919  30.878  -2.717  1.00 30.17      L     O
ATOM   4590  ND2 ASN  28     -42.943  31.918  -2.986  1.00 27.56      L     N
ATOM   4591  C   ASN  28     -45.150  28.649  -5.101  1.00 32.18      L     C
ATOM   4592  O   ASN  28     -45.499  27.846  -5.971  1.00 33.39      L     O
ATOM   4593  N   ILE  29     -45.830  28.818  -3.974  1.00 31.68      L     N
ATOM   4594  CA  ILE  29     -47.009  28.012  -3.703  1.00 34.34      L     C
ATOM   4595  CB  ILE  29     -47.614  28.348  -2.323  1.00 34.09      L     C
ATOM   4596  CG2 ILE  29     -48.921  27.592  -2.126  1.00 33.22      L     C
ATOM   4597  CG1 ILE  29     -46.613  27.993  -1.221  1.00 32.59      L     C
ATOM   4598  CD1 ILE  29     -47.137  28.233   0.186  1.00 33.16      L     C
ATOM   4599  C   ILE  29     -48.063  28.232  -4.786  1.00 36.40      L     C
ATOM   4600  O   ILE  29     -48.703  27.281  -5.241  1.00 37.01      L     O
ATOM   4601  N   GLY  30     -48.230  29.485  -5.202  1.00 36.65      L     N
ATOM   4602  CA  GLY  30     -49.224  29.801  -6.212  1.00 37.76      L     C
ATOM   4603  C   GLY  30     -48.821  29.425  -7.630  1.00 39.98      L     C
ATOM   4604  O   GLY  30     -49.600  29.610  -8.562  1.00 41.54      L     O
ATOM   4605  N   ALA  31     -47.612  28.896  -7.800  1.00 39.82      L     N
ATOM   4606  CA  ALA  31     -47.131  28.495  -9.119  1.00 38.00      L     C
ATOM   4607  CB  ALA  31     -45.687  28.942  -9.313  1.00 34.50      L     C
ATOM   4608  C   ALA  31     -47.233  26.991  -9.305  1.00 39.19      L     C
ATOM   4609  O   ALA  31     -46.697  26.441 -10.268  1.00 40.14      L     O
ATOM   4610  N   GLY  32     -47.907  26.319  -8.377  1.00 39.51      L     N
ATOM   4611  CA  GLY  32     -48.112  24.889  -8.526  1.00 39.02      L     C
ATOM   4612  C   GLY  32     -47.097  23.998  -7.825  1.00 39.80      L     C
ATOM   4613  O   GLY  32     -47.106  22.779  -8.004  1.00 42.17      L     O
ATOM   4614  N   TYR  33     -46.213  24.586  -7.029  1.00 36.85      L     N
ATOM   4615  CA  TYR  33     -45.240  23.785  -6.297  1.00 35.51      L     C
ATOM   4616  CB  TYR  33     -43.951  24.592  -6.092  1.00 34.69      L     C
ATOM   4617  CG  TYR  33     -43.300  24.951  -7.410  1.00 34.74      L     C
ATOM   4618  CD1 TYR  33     -42.695  23.974  -8.196  1.00 33.78      L     C
ATOM   4619  CE1 TYR  33     -42.170  24.279  -9.443  1.00 34.40      L     C
ATOM   4620  CD2 TYR  33     -43.356  26.250  -7.903  1.00 35.64      L     C
ATOM   4621  CE2 TYR  33     -42.834  26.566  -9.149  1.00 34.16      L     C
ATOM   4622  CZ  TYR  33     -42.247  25.579  -9.913  1.00 35.08      L     C
ATOM   4623  OH  TYR  33     -41.747  25.893 -11.157  1.00 38.62      L     O
ATOM   4624  C   TYR  33     -45.835  23.345  -4.962  1.00 32.94      L     C
ATOM   4625  O   TYR  33     -46.581  24.095  -4.340  1.00 33.35      L     O
ATOM   4626  N   ASP  34     -45.526  22.120  -4.544  1.00 29.96      L     N
ATOM   4627  CA  ASP  34     -46.046  21.580  -3.288  1.00 28.49      L     C
ATOM   4628  CB  ASP  34     -45.809  20.071  -3.221  1.00 30.81      L     C
ATOM   4629  CG  ASP  34     -46.733  19.280  -4.136  1.00 34.47      L     C
ATOM   4630  OD1 ASP  34     -46.567  18.041  -4.189  1.00 36.39      L     O
ATOM   4631  OD2 ASP  34     -47.618  19.879  -4.793  1.00 32.29      L     O
ATOM   4632  C   ASP  34     -45.377  22.229  -2.073  1.00 27.51      L     C
ATOM   4633  O   ASP  34     -44.238  22.701  -2.151  1.00 25.64      L     O
ATOM   4634  N   VAL  35     -46.090  22.241  -0.954  1.00 26.98      L     N
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ATOM   4635  CA  VAL   35     -45.523  22.652   0.326  1.00 28.45      L    C
ATOM   4636  CB  VAL   35     -46.543  23.485   1.139  1.00 27.84      L    C
ATOM   4637  CG1 VAL   35     -45.970  23.840   2.497  1.00 25.77      L    C
ATOM   4638  CG2 VAL   35     -46.897  24.756   0.375  1.00 29.67      L    C
ATOM   4639  C   VAL   35     -45.143  21.413   1.136  1.00 28.31      L    C
ATOM   4640  O   VAL   35     -45.925  20.471   1.237  1.00 28.31      L    O
ATOM   4641  N   HIS   36     -43.943  21.408   1.706  1.00 27.34      L    N
ATOM   4642  CA  HIS   36     -43.556  20.336   2.623  1.00 27.59      L    C
ATOM   4643  CB  HIS   36     -42.284  19.633   2.131  1.00 26.50      L    C
ATOM   4644  CG  HIS   36     -42.256  19.391   0.653  1.00 27.79      L    C
ATOM   4645  CD2 HIS   36     -41.509  19.955  -0.327  1.00 25.62      L    C
ATOM   4646  ND1 HIS   36     -43.056  18.454   0.032  1.00 27.57      L    N
ATOM   4647  CE1 HIS   36     -42.801  18.450  -1.264  1.00 27.14      L    C
ATOM   4648  NE2 HIS   36     -41.866  19.351  -1.508  1.00 27.36      L    N
ATOM   4649  C   HIS   36     -43.309  20.928   4.009  1.00 28.07      L    C
ATOM   4650  O   HIS   36     -42.879  22.082   4.127  1.00 28.94      L    O
ATOM   4651  N   TRP   37     -43.575  20.140   5.051  1.00 25.76      L    N
ATOM   4652  CA  TRP   37     -43.456  20.614   6.426  1.00 24.75      L    C
ATOM   4653  CB  TRP   37     -44.807  20.545   7.145  1.00 22.85      L    C
ATOM   4654  CG  TRP   37     -45.845  21.469   6.588  1.00 25.11      L    C
ATOM   4655  CD2 TRP   37     -46.188  22.769   7.082  1.00 23.55      L    C
ATOM   4656  CE2 TRP   37     -47.265  23.244   6.301  1.00 24.06      L    C
ATOM   4657  CE3 TRP   37     -45.693  23.576   8.111  1.00 25.38      L    C
ATOM   4658  CD1 TRP   37     -46.704  21.215   5.544  1.00 22.14      L    C
ATOM   4659  NE1 TRP   37     -47.559  22.278   5.370  1.00 24.91      L    N
ATOM   4660  CZ2 TRP   37     -47.856  24.488   6.520  1.00 23.30      L    C
ATOM   4661  CZ3 TRP   37     -46.280  24.813   8.330  1.00 24.69      L    C
ATOM   4662  CH2 TRP   37     -47.352  25.257   7.537  1.00 26.88      L    C
ATOM   4663  C   TRP   37     -42.437  19.813   7.220  1.00 26.46      L    C
ATOM   4664  O   TRP   37     -42.348  18.587   7.099  1.00 25.56      L    O
ATOM   4665  N   TYR   38     -41.678  20.528   8.042  1.00 25.83      L    N
ATOM   4666  CA  TYR   38     -40.661  19.928   8.883  1.00 25.04      L    C
ATOM   4667  CB  TYR   38     -39.286  20.427   8.462  1.00 24.09      L    C
ATOM   4668  CG  TYR   38     -39.001  20.144   7.010  1.00 26.55      L    C
ATOM   4669  CD1 TYR   38     -39.377  21.047   6.026  1.00 25.25      L    C
ATOM   4670  CE1 TYR   38     -39.164  20.775   4.686  1.00 26.99      L    C
ATOM   4671  CD2 TYR   38     -38.394  18.953   6.617  1.00 25.37      L    C
ATOM   4672  CE2 TYR   38     -38.174  18.671   5.278  1.00 25.45      L    C
ATOM   4673  CZ  TYR   38     -38.566  19.591   4.317  1.00 26.83      L    C
ATOM   4674  OH  TYR   38     -38.362  19.332   2.981  1.00 27.05      L    O
ATOM   4675  C   TYR   38     -40.911  20.270  10.342  1.00 27.08      L    C
ATOM   4676  O   TYR   38     -41.383  21.365  10.673  1.00 25.71      L    O
ATOM   4677  N   GLN   39     -40.596  19.314  11.204  1.00 27.12      L    N
ATOM   4678  CA  GLN   39     -40.677  19.495  12.644  1.00 26.88      L    C
ATOM   4679  CB  GLN   39     -41.471  18.349  13.262  1.00 26.61      L    C
ATOM   4680  CG  GLN   39     -41.665  18.445  14.767  1.00 27.00      L    C
ATOM   4681  CD  GLN   39     -42.299  17.184  15.326  1.00 28.70      L    C
ATOM   4682  OE1 GLN   39     -41.752  16.087  15.179  1.00 28.98      L    O
ATOM   4683  NE2 GLN   39     -43.461  17.330  15.965  1.00 25.31      L    N
ATOM   4684  C   GLN   39     -39.262  19.475  13.190  1.00 27.65      L    C
ATOM   4685  O   GLN   39     -38.481  18.585  12.855  1.00 27.35      L    O
ATOM   4686  N   GLN   40     -38.921  20.451  14.022  1.00 26.72      L    N
ATOM   4687  CA  GLN   40     -37.609  20.440  14.660  1.00 29.84      L    C
ATOM   4688  CB  GLN   40     -36.766  21.624  14.172  1.00 28.79      L    C
ATOM   4689  CG  GLN   40     -35.331  21.609  14.685  1.00 30.78      L    C
ATOM   4690  CD  GLN   40     -34.505  22.776  14.157  1.00 31.87      L    C
ATOM   4691  OE1 GLN   40     -35.014  23.887  13.984  1.00 30.96      L    O
ATOM   4692  NE2 GLN   40     -33.226  22.527  13.900  1.00 26.76      L    N
ATOM   4693  C   GLN   40     -37.769  20.502  16.175  1.00 31.91      L    C
ATOM   4694  O   GLN   40     -38.186  21.519  16.729  1.00 30.67      L    O
ATOM   4695  N   LEU   41     -37.450  19.398  16.839  1.00 36.61      L    N
ATOM   4696  CA  LEU   41     -37.465  19.353  18.294  1.00 40.30      L    C
ATOM   4697  CB  LEU   41     -37.397  17.906  18.779  1.00 40.69      L    C
ATOM   4698  CG  LEU   41     -38.540  17.014  18.289  1.00 45.02      L    C
ATOM   4699  CD1 LEU   41     -38.322  15.587  18.778  1.00 47.42      L    C
ATOM   4700  CD2 LEU   41     -39.866  17.558  18.790  1.00 45.56      L    C
ATOM   4701  C   LEU   41     -36.268  20.127  18.813  1.00 41.26      L    C
ATOM   4702  O   LEU   41     -35.249  20.244  18.131  1.00 40.76      L    O
ATOM   4703  N   PRO   42     -36.374  20.670  20.031  1.00 44.22      L    N
ATOM   4704  CD  PRO   42     -37.515  20.575  20.961  1.00 44.68      L    C
ATOM   4705  CA  PRO   42     -35.270  21.466  20.584  1.00 45.94      L    C
ATOM   4706  CB  PRO   42     -35.733  21.786  22.006  1.00 45.06      L    C
ATOM   4707  CG  PRO   42     -37.239  21.682  21.942  1.00 45.70      L    C
ATOM   4708  C   PRO   42     -33.955  20.684  20.561  1.00 47.33      L    C
ATOM   4709  O   PRO   42     -33.887  19.550  21.042  1.00 47.47      L    O
ATOM   4710  N   GLY   43     -32.924  21.284  19.976  1.00 48.07      L    N
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ATOM   4711  CA  GLY    43     -31.632  20.626  19.902  1.00 49.97      L    C
ATOM   4712  C   GLY    43     -31.587  19.359  19.058  1.00 51.95      L    C
ATOM   4713  O   GLY    43     -30.963  18.374  19.455  1.00 54.06      L    O
ATOM   4714  N   THR    44     -32.245  19.373  17.899  1.00 49.25      L    N
ATOM   4715  CA  THR    44     -32.135  18.274  16.947  1.00 44.82      L    C
ATOM   4716  CB  THR    44     -33.288  17.256  17.111  1.00 46.65      L    C
ATOM   4717  OG1 THR    44     -34.531  17.869  16.741  1.00 48.05      L    O
ATOM   4718  CG2 THR    44     -33.384  16.781  18.558  1.00 46.96      L    C
ATOM   4719  C   THR    44     -32.171  18.812  15.519  1.00 41.95      L    C
ATOM   4720  O   THR    44     -32.424  19.994  15.294  1.00 41.93      L    O
ATOM   4721  N   ALA    45     -31.912  17.939  14.556  1.00 39.35      L    N
ATOM   4722  CA  ALA    45     -32.058  18.293  13.150  1.00 37.05      L    C
ATOM   4723  CB  ALA    45     -31.294  17.312  12.285  1.00 37.54      L    C
ATOM   4724  C   ALA    45     -33.533  18.269  12.774  1.00 35.57      L    C
ATOM   4725  O   ALA    45     -34.326  17.537  13.369  1.00 34.35      L    O
ATOM   4726  N   PRO    46     -33.918  19.070  11.774  1.00 33.17      L    N
ATOM   4727  CD  PRO    46     -33.124  20.113  11.103  1.00 33.74      L    C
ATOM   4728  CA  PRO    46     -35.280  18.991  11.245  1.00 32.23      L    C
ATOM   4729  CB  PRO    46     -35.279  20.002  10.096  1.00 32.13      L    C
ATOM   4730  CG  PRO    46     -34.178  20.960  10.444  1.00 34.08      L    C
ATOM   4731  C   PRO    46     -35.558  17.582  10.755  1.00 31.89      L    C
ATOM   4732  O   PRO    46     -34.652  16.894  10.283  1.00 32.49      L    O
ATOM   4733  N   LYS    47     -36.803  17.141  10.873  1.00 31.47      L    N
ATOM   4734  CA  LYS    47     -37.210  15.914  10.200  1.00 33.45      L    C
ATOM   4735  CB  LYS    47     -37.460  14.790  11.215  1.00 35.12      L    C
ATOM   4736  CG  LYS    47     -38.870  14.755  11.764  1.00 41.61      L    C
ATOM   4737  CD  LYS    47     -39.162  13.420  12.443  1.00 47.61      L    C
ATOM   4738  CE  LYS    47     -40.662  13.196  12.597  1.00 50.11      L    C
ATOM   4739  NZ  LYS    47     -40.987  11.855  13.161  1.00 52.03      L    N
ATOM   4740  C   LYS    47     -38.475  16.169   9.387  1.00 30.96      L    C
ATOM   4741  O   LYS    47     -39.262  17.059   9.712  1.00 28.92      L    O
ATOM   4742  N   LEU    48     -38.661  15.381   8.332  1.00 30.98      L    N
ATOM   4743  CA  LEU    48     -39.814  15.526   7.448  1.00 29.23      L    C
ATOM   4744  CB  LEU    48     -39.668  14.589   6.245  1.00 29.31      L    C
ATOM   4745  CG  LEU    48     -40.813  14.640   5.230  1.00 30.45      L    C
ATOM   4746  CD1 LEU    48     -40.989  16.074   4.740  1.00 28.18      L    C
ATOM   4747  CD2 LEU    48     -40.515  13.697   4.068  1.00 28.52      L    C
ATOM   4748  C   LEU    48     -41.084  15.182   8.208  1.00 27.62      L    C
ATOM   4749  O   LEU    48     -41.135  14.160   8.882  1.00 29.03      L    O
ATOM   4750  N   LEU    49     -42.105  16.028   8.091  1.00 26.47      L    N
ATOM   4751  CA  LEU    49     -43.375  15.826   8.793  1.00 25.82      L    C
ATOM   4752  CB  LEU    49     -43.688  17.046   9.664  1.00 24.24      L    C
ATOM   4753  CG  LEU    49     -44.941  16.965  10.538  1.00 24.60      L    C
ATOM   4754  CD1 LEU    49     -44.685  15.971  11.675  1.00 18.36      L    C
ATOM   4755  CD2 LEU    49     -45.295  18.353  11.086  1.00 20.80      L    C
ATOM   4756  C   LEU    49     -44.544  15.589   7.825  1.00 28.13      L    C
ATOM   4757  O   LEU    49     -45.342  14.669   8.007  1.00 29.97      L    O
ATOM   4758  N   ILE    50     -44.648  16.438   6.808  1.00 26.87      L    N
ATOM   4759  CA  ILE    50     -45.665  16.312   5.770  1.00 27.06      L    C
ATOM   4760  CB  ILE    50     -46.783  17.382   5.917  1.00 26.55      L    C
ATOM   4761  CG2 ILE    50     -47.716  17.325   4.697  1.00 25.11      L    C
ATOM   4762  CG1 ILE    50     -47.569  17.184   7.215  1.00 24.89      L    C
ATOM   4763  CD1 ILE    50     -48.447  15.944   7.230  1.00 26.04      L    C
ATOM   4764  C   ILE    50     -44.968  16.569   4.432  1.00 28.76      L    C
ATOM   4765  O   ILE    50     -44.224  17.547   4.293  1.00 26.93      L    O
ATOM   4766  N   SER    51     -45.201  15.707   3.449  1.00 26.34      L    N
ATOM   4767  CA  SER    51     -44.674  15.963   2.114  1.00 27.63      L    C
ATOM   4768  CB  SER    51     -43.760  14.821   1.670  1.00 26.45      L    C
ATOM   4769  OG  SER    51     -44.481  13.605   1.599  1.00 28.18      L    O
ATOM   4770  C   SER    51     -45.823  16.112   1.124  1.00 28.06      L    C
ATOM   4771  O   SER    51     -46.910  15.553   1.325  1.00 27.05      L    O
ATOM   4772  N   GLY    52     -45.579  16.868   0.059  1.00 28.20      L    N
ATOM   4773  CA  GLY    52     -46.568  16.999  -0.999  1.00 28.39      L    C
ATOM   4774  C   GLY    52     -47.898  17.525  -0.495  1.00 28.92      L    C
ATOM   4775  O   GLY    52     -48.950  16.985  -0.838  1.00 28.40      L    O
ATOM   4776  N   ASN    53     -47.845  18.571   0.328  1.00 26.76      L    N
ATOM   4777  CA  ASN    53     -49.044  19.222   0.868  1.00 28.99      L    C
ATOM   4778  CB  ASN    53     -50.080  19.496  -0.239  1.00 27.64      L    C
ATOM   4779  CG  ASN    53     -49.514  20.313  -1.391  1.00 31.12      L    C
ATOM   4780  OD1 ASN    53     -48.790  21.288  -1.184  1.00 30.52      L    O
ATOM   4781  ND2 ASN    53     -49.846  19.914  -2.617  1.00 28.74      L    N
ATOM   4782  C   ASN    53     -49.737  18.448   1.986  1.00 28.32      L    C
ATOM   4783  O   ASN    53     -50.223  19.047   2.947  1.00 26.59      L    O
ATOM   4784  N   SER    54     -49.814  17.128   1.862  1.00 30.28      L    N
ATOM   4785  CA  SER    54     -50.744  16.385   2.713  1.00 32.77      L    C
ATOM   4786  CB  SER    54     -52.149  16.428   2.105  1.00 31.85      L    C
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ATOM   4787  OG  SER    54     -52.154  15.785   0.842  1.00 36.17      L    O
ATOM   4788  C   SER    54     -50.386  14.935   3.008  1.00 31.72      L    C
ATOM   4789  O   SER    54     -51.165  14.237   3.659  1.00 32.86      L    O
ATOM   4790  N   ASN    55     -49.232  14.473   2.533  1.00 31.26      L    N
ATOM   4791  CA  ASN    55     -48.818  13.085   2.775  1.00 32.61      L    C
ATOM   4792  CB  ASN    55     -48.020  12.551   1.582  1.00 32.07      L    C
ATOM   4793  CG  ASN    55     -48.839  12.526   0.298  1.00 35.95      L    C
ATOM   4794  OD1 ASN    55     -49.720  11.686   0.134  1.00 36.33      L    O
ATOM   4795  ND2 ASN    55     -48.553  13.453  -0.616  1.00 34.48      L    N
ATOM   4796  C   ASN    55     -47.983  12.937   4.051  1.00 32.40      L    C
ATOM   4797  O   ASN    55     -47.071  13.724   4.305  1.00 31.40      L    O
ATOM   4798  N   ARG    56     -48.300  11.920   4.844  1.00 34.00      L    N
ATOM   4799  CA  ARG    56     -47.554  11.626   6.061  1.00 35.54      L    C
ATOM   4800  CB  ARG    56     -48.506  11.199   7.182  1.00 36.63      L    C
ATOM   4801  CG  ARG    56     -49.371  12.328   7.723  1.00 42.78      L    C
ATOM   4802  CD  ARG    56     -50.289  11.856   8.846  1.00 46.38      L    C
ATOM   4803  NE  ARG    56     -51.374  11.010   8.356  1.00 49.53      L    N
ATOM   4804  CZ  ARG    56     -51.380   9.683   8.449  1.00 54.19      L    C
ATOM   4805  NH1 ARG    56     -52.404   8.991   7.971  1.00 55.69      L    N
ATOM   4806  NH2 ARG    56     -50.363   9.047   9.025  1.00 53.47      L    N
ATOM   4807  C   ARG    56     -46.539  10.523   5.822  1.00 35.53      L    C
ATOM   4808  O   ARG    56     -46.886   9.444   5.353  1.00 35.07      L    O
ATOM   4809  N   PRO    57     -45.267  10.781   6.154  1.00 36.46      L    N
ATOM   4810  CD  PRO    57     -44.712  12.097   6.516  1.00 35.66      L    C
ATOM   4811  CA  PRO    57     -44.244   9.729   6.163  1.00 37.45      L    C
ATOM   4812  CB  PRO    57     -42.968  10.464   6.581  1.00 36.26      L    C
ATOM   4813  CG  PRO    57     -43.240  11.915   6.281  1.00 37.45      L    C
ATOM   4814  C   PRO    57     -44.613   8.632   7.167  1.00 39.29      L    C
ATOM   4815  O   PRO    57     -45.359   8.875   8.121  1.00 37.09      L    O
ATOM   4816  N   SER    58     -44.091   7.430   6.944  1.00 40.87      L    N
ATOM   4817  CA  SER    58     -44.130   6.386   7.965  1.00 43.46      L    C
ATOM   4818  CB  SER    58     -43.252   5.199   7.557  1.00 43.89      L    C
ATOM   4819  OG  SER    58     -43.995   4.260   6.803  1.00 51.42      L    O
ATOM   4820  C   SER    58     -43.621   6.936   9.285  1.00 41.83      L    C
ATOM   4821  O   SER    58     -42.569   7.575   9.338  1.00 43.28      L    O
ATOM   4822  N   GLY    59     -44.363   6.681  10.353  1.00 40.66      L    N
ATOM   4823  CA  GLY    59     -43.914   7.120  11.658  1.00 40.19      L    C
ATOM   4824  C   GLY    59     -44.533   8.423  12.118  1.00 40.38      L    C
ATOM   4825  O   GLY    59     -44.383   8.793  13.278  1.00 44.27      L    O
ATOM   4826  N   VAL    60     -45.225   9.128  11.228  1.00 38.65      L    N
ATOM   4827  CA  VAL    60     -45.922  10.342  11.627  1.00 36.24      L    C
ATOM   4828  CB  VAL    60     -45.788  11.446  10.550  1.00 36.26      L    C
ATOM   4829  CG1 VAL    60     -46.661  12.642  10.917  1.00 33.36      L    C
ATOM   4830  CG2 VAL    60     -44.329  11.874  10.425  1.00 31.61      L    C
ATOM   4831  C   VAL    60     -47.398  10.061  11.882  1.00 36.29      L    C
ATOM   4832  O   VAL    60     -48.119   9.613  10.992  1.00 36.29      L    O
ATOM   4833  N   PRO    61     -47.866  10.327  13.113  1.00 36.76      L    N
ATOM   4834  CD  PRO    61     -47.074  10.985  14.165  1.00 37.16      L    C
ATOM   4835  CA  PRO    61     -49.233  10.023  13.560  1.00 36.64      L    C
ATOM   4836  CB  PRO    61     -49.262  10.509  15.010  1.00 37.12      L    C
ATOM   4837  CG  PRO    61     -47.829  10.647  15.415  1.00 38.26      L    C
ATOM   4838  C   PRO    61     -50.271  10.762  12.714  1.00 38.15      L    C
ATOM   4839  O   PRO    61     -49.997  11.847  12.193  1.00 36.93      L    O
ATOM   4840  N   ASP    62     -51.464  10.189  12.594  1.00 37.72      L    N
ATOM   4841  CA  ASP    62     -52.509  10.802  11.779  1.00 39.64      L    C
ATOM   4842  CB  ASP    62     -53.630   9.790  11.491  1.00 45.58      L    C
ATOM   4843  CG  ASP    62     -54.249   9.209  12.763  1.00 52.82      L    C
ATOM   4844  OD1 ASP    62     -53.929   9.692  13.877  1.00 54.52      L    O
ATOM   4845  OD2 ASP    62     -55.063   8.262  12.642  1.00 57.04      L    O
ATOM   4846  C   ASP    62     -53.085  12.054  12.440  1.00 36.85      L    C
ATOM   4847  O   ASP    62     -53.968  12.709  11.887  1.00 35.85      L    O
ATOM   4848  N   ARG    63     -52.579  12.383  13.623  1.00 33.17      L    N
ATOM   4849  CA  ARG    63     -52.920  13.642  14.275  1.00 33.59      L    C
ATOM   4850  CB  ARG    63     -52.253  13.728  15.658  1.00 34.57      L    C
ATOM   4851  CG  ARG    63     -52.537  12.529  16.546  1.00 40.31      L    C
ATOM   4852  CD  ARG    63     -52.038  12.725  17.983  1.00 41.07      L    C
ATOM   4853  NE  ARG    63     -50.578  12.668  18.119  1.00 39.33      L    N
ATOM   4854  CZ  ARG    63     -49.811  13.746  18.221  1.00 36.57      L    C
ATOM   4855  NH1 ARG    63     -50.373  14.944  18.188  1.00 34.87      L    N
ATOM   4856  NH2 ARG    63     -48.499  13.631  18.394  1.00 34.48      L    N
ATOM   4857  C   ARG    63     -52.455  14.819  13.413  1.00 30.38      L    C
ATOM   4858  O   ARG    63     -53.024  15.908  13.483  1.00 28.85      L    O
ATOM   4859  N   PHE    64     -51.417  14.592  12.613  1.00 27.74      L    N
ATOM   4860  CA  PHE    64     -50.875  15.637  11.736  1.00 29.98      L    C
ATOM   4861  CB  PHE    64     -49.348  15.502  11.621  1.00 26.68      L    C
ATOM   4862  CG  PHE    64     -48.608  15.769  12.911  1.00 28.95      L    C
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ATOM   4863  CD1 PHE    64     -48.214  17.062  13.247  1.00 27.02      L    C
ATOM   4864  CD2 PHE    64     -48.295  14.729  13.780  1.00 27.70      L    C
ATOM   4865  CE1 PHE    64     -47.518  17.313  14.431  1.00 27.84      L    C
ATOM   4866  CE2 PHE    64     -47.599  14.972  14.967  1.00 28.68      L    C
ATOM   4867  CZ  PHE    64     -47.211  16.267  15.291  1.00 27.70      L    C
ATOM   4868  C   PHE    64     -51.487  15.548  10.340  1.00 30.00      L    C
ATOM   4869  O   PHE    64     -51.518  14.475   9.744  1.00 29.23      L    O
ATOM   4870  N   SER    65     -51.963  16.673   9.819  1.00 29.23      L    N
ATOM   4871  CA  SER    65     -52.463  16.722   8.445  1.00 31.26      L    C
ATOM   4872  CB  SER    65     -53.980  16.499   8.413  1.00 30.43      L    C
ATOM   4873  OG  SER    65     -54.665  17.575   9.032  1.00 32.55      L    O
ATOM   4874  C   SER    65     -52.135  18.061   7.787  1.00 31.18      L    C
ATOM   4875  O   SER    65     -51.937  19.066   8.470  1.00 31.63      L    O
ATOM   4876  N   GLY    66     -52.077  18.066   6.460  1.00 30.29      L    N
ATOM   4877  CA  GLY    66     -51.749  19.283   5.746  1.00 32.02      L    C
ATOM   4878  C   GLY    66     -52.688  19.542   4.585  1.00 34.44      L    C
ATOM   4879  O   GLY    66     -53.314  18.624   4.064  1.00 35.30      L    O
ATOM   4880  N   SER    67     -52.793  20.798   4.174  1.00 35.63      L    N
ATOM   4881  CA  SER    67     -53.540  21.126   2.971  1.00 37.94      L    C
ATOM   4882  CB  SER    67     -55.018  21.369   3.304  1.00 37.38      L    C
ATOM   4883  OG  SER    67     -55.168  22.386   4.280  1.00 39.96      L    O
ATOM   4884  C   SER    67     -52.954  22.358   2.300  1.00 39.49      L    C
ATOM   4885  O   SER    67     -52.248  23.150   2.936  1.00 39.23      L    O
ATOM   4886  N   LYS    68     -53.252  22.507   1.012  1.00 40.52      L    N
ATOM   4887  CA  LYS    68     -52.826  23.666   0.236  1.00 42.33      L    C
ATOM   4888  CB  LYS    68     -51.729  23.267  -0.755  1.00 42.24      L    C
ATOM   4889  CG  LYS    68     -51.463  24.323  -1.831  1.00 44.74      L    C
ATOM   4890  CD  LYS    68     -50.479  23.832  -2.890  1.00 46.29      L    C
ATOM   4891  CE  LYS    68     -50.427  24.782  -4.088  1.00 47.53      L    C
ATOM   4892  NZ  LYS    68     -49.320  24.451  -5.037  1.00 44.81      L    N
ATOM   4893  C   LYS    68     -54.004  24.268  -0.531  1.00 42.80      L    C
ATOM   4894  O   LYS    68     -54.869  23.549  -1.026  1.00 41.34      L    O
ATOM   4895  N   SER    69     -54.026  25.590  -0.640  1.00 43.73      L    N
ATOM   4896  CA  SER    69     -55.090  26.268  -1.366  1.00 44.46      L    C
ATOM   4897  CB  SER    69     -56.310  26.424  -0.458  1.00 46.75      L    C
ATOM   4898  OG  SER    69     -57.267  27.293  -1.036  1.00 51.75      L    O
ATOM   4899  C   SER    69     -54.635  27.637  -1.867  1.00 43.71      L    C
ATOM   4900  O   SER    69     -54.309  28.523  -1.074  1.00 42.73      L    O
ATOM   4901  N   GLY    70     -54.616  27.807  -3.186  1.00 43.48      L    N
ATOM   4902  CA  GLY    70     -54.209  29.082  -3.749  1.00 41.87      L    C
ATOM   4903  C   GLY    70     -52.744  29.356  -3.470  1.00 42.01      L    C
ATOM   4904  O   GLY    70     -51.877  28.578  -3.871  1.00 42.41      L    O
ATOM   4905  N   THR    71     -52.460  30.453  -2.775  1.00 40.06      L    N
ATOM   4906  CA  THR    71     -51.083  30.799  -2.443  1.00 40.11      L    C
ATOM   4907  CB  THR    71     -50.801  32.283  -2.712  1.00 40.96      L    C
ATOM   4908  OG1 THR    71     -51.714  33.081  -1.951  1.00 40.94      L    O
ATOM   4909  CG2 THR    71     -50.953  32.601  -4.201  1.00 39.96      L    C
ATOM   4910  C   THR    71     -50.732  30.511  -0.981  1.00 39.88      L    C
ATOM   4911  O   THR    71     -49.700  30.963  -0.487  1.00 40.96      L    O
ATOM   4912  N   SER    72     -51.590  29.774  -0.285  1.00 37.34      L    N
ATOM   4913  CA  SER    72     -51.303  29.436   1.100  1.00 37.58      L    C
ATOM   4914  CB  SER    72     -52.187  30.259   2.041  1.00 38.75      L    C
ATOM   4915  OG  SER    72     -53.541  29.863   1.940  1.00 43.69      L    O
ATOM   4916  C   SER    72     -51.471  27.941   1.392  1.00 36.49      L    C
ATOM   4917  O   SER    72     -52.095  27.201   0.619  1.00 34.73      L    O
ATOM   4918  N   ALA    73     -50.880  27.504   2.500  1.00 33.01      L    N
ATOM   4919  CA  ALA    73     -50.997  26.124   2.950  1.00 31.45      L    C
ATOM   4920  CB  ALA    73     -49.767  25.328   2.543  1.00 30.50      L    C
ATOM   4921  C   ALA    73     -51.154  26.114   4.463  1.00 31.13      L    C
ATOM   4922  O   ALA    73     -50.896  27.113   5.132  1.00 30.70      L    O
ATOM   4923  N   SER    74     -51.583  24.985   5.006  1.00 30.38      L    N
ATOM   4924  CA  SER    74     -51.886  24.932   6.421  1.00 32.16      L    C
ATOM   4925  CB  SER    74     -53.375  25.219   6.627  1.00 32.93      L    C
ATOM   4926  OG  SER    74     -53.697  25.321   8.002  1.00 40.40      L    O
ATOM   4927  C   SER    74     -51.510  23.574   7.001  1.00 30.96      L    C
ATOM   4928  O   SER    74     -51.747  22.540   6.379  1.00 32.04      L    O
ATOM   4929  N   LEU    75     -50.902  23.585   8.184  1.00 31.07      L    N
ATOM   4930  CA  LEU    75     -50.638  22.354   8.928  1.00 29.53      L    C
ATOM   4931  CB  LEU    75     -49.192  22.336   9.441  1.00 26.68      L    C
ATOM   4932  CG  LEU    75     -48.781  21.170  10.362  1.00 28.53      L    C
ATOM   4933  CD1 LEU    75     -48.627  19.878   9.553  1.00 23.41      L    C
ATOM   4934  CD2 LEU    75     -47.456  21.510  11.059  1.00 24.35      L    C
ATOM   4935  C   LEU    75     -51.607  22.306  10.107  1.00 31.37      L    C
ATOM   4936  O   LEU    75     -51.767  23.296  10.827  1.00 30.48      L    O
ATOM   4937  N   ALA    76     -52.263  21.163  10.300  1.00 30.74      L    N
ATOM   4938  CA  ALA    76     -53.173  21.007  11.425  1.00 30.46      L    C
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ATOM   4939  CB  ALA    76     -54.600  20.778  10.930  1.00 27.72      L    C
ATOM   4940  C   ALA    76     -52.737  19.857  12.316  1.00 30.96      L    C
ATOM   4941  O   ALA    76     -52.334  18.803  11.833  1.00 31.40      L    O
ATOM   4942  N   ILE    77     -52.822  20.077  13.624  1.00 31.12      L    N
ATOM   4943  CA  ILE    77     -52.447  19.075  14.612  1.00 31.39      L    C
ATOM   4944  CB  ILE    77     -51.234  19.550  15.440  1.00 32.11      L    C
ATOM   4945  CG2 ILE    77     -50.800  18.460  16.412  1.00 31.86      L    C
ATOM   4946  CG1 ILE    77     -50.085  19.930  14.505  1.00 33.01      L    C
ATOM   4947  CD1 ILE    77     -48.913  20.579  15.210  1.00 31.72      L    C
ATOM   4948  C   ILE    77     -53.630  18.887  15.550  1.00 31.92      L    C
ATOM   4949  O   ILE    77     -54.000  19.811  16.271  1.00 33.01      L    O
ATOM   4950  N   THR    78     -54.231  17.701  15.538  1.00 32.75      L    N
ATOM   4951  CA  THR    78     -55.314  17.401  16.474  1.00 34.22      L    C
ATOM   4952  CB  THR    78     -56.425  16.563  15.808  1.00 36.19      L    C
ATOM   4953  OG1 THR    78     -55.877  15.314  15.369  1.00 37.55      L    O
ATOM   4954  CG2 THR    78     -57.014  17.311  14.610  1.00 33.93      L    C
ATOM   4955  C   THR    78     -54.750  16.618  17.652  1.00 33.72      L    C
ATOM   4956  O   THR    78     -53.631  16.110  17.582  1.00 35.50      L    O
ATOM   4957  N   GLY    79     -55.514  16.529  18.735  1.00 33.77      L    N
ATOM   4958  CA  GLY    79     -55.052  15.777  19.891  1.00 31.44      L    C
ATOM   4959  C   GLY    79     -53.649  16.178  20.312  1.00 30.87      L    C
ATOM   4960  O   GLY    79     -52.798  15.327  20.543  1.00 31.97      L    O
ATOM   4961  N   LEU    80     -53.406  17.480  20.410  1.00 29.82      L    N
ATOM   4962  CA  LEU    80     -52.082  18.001  20.731  1.00 30.55      L    C
ATOM   4963  CB  LEU    80     -52.200  19.489  21.088  1.00 31.73      L    C
ATOM   4964  CG  LEU    80     -50.929  20.337  21.084  1.00 31.97      L    C
ATOM   4965  CD1 LEU    80     -50.314  20.326  19.690  1.00 31.53      L    C
ATOM   4966  CD2 LEU    80     -51.271  21.764  21.495  1.00 33.68      L    C
ATOM   4967  C   LEU    80     -51.443  17.231  21.894  1.00 31.41      L    C
ATOM   4968  O   LEU    80     -52.080  17.015  22.924  1.00 28.69      L    O
ATOM   4969  N   GLN    81     -50.187  16.816  21.718  1.00 33.22      L    N
ATOM   4970  CA  GLN    81     -49.425  16.126  22.769  1.00 35.00      L    C
ATOM   4971  CB  GLN    81     -48.930  14.760  22.277  1.00 36.97      L    C
ATOM   4972  CG  GLN    81     -50.027  13.790  21.874  1.00 46.26      L    C
ATOM   4973  CD  GLN    81     -50.816  13.277  23.066  1.00 52.65      L    C
ATOM   4974  OE1 GLN    81     -50.313  12.475  23.858  1.00 56.12      L    O
ATOM   4975  NE2 GLN    81     -52.061  13.739  23.203  1.00 54.96      L    N
ATOM   4976  C   GLN    81     -48.213  16.952  23.190  1.00 34.68      L    C
ATOM   4977  O   GLN    81     -47.676  17.731  22.395  1.00 32.67      L    O
ATOM   4978  N   ALA    82     -47.772  16.754  24.431  1.00 34.64      L    N
ATOM   4979  CA  ALA    82     -46.587  17.427  24.966  1.00 35.20      L    C
ATOM   4980  CB  ALA    82     -46.257  16.872  26.356  1.00 36.44      L    C
ATOM   4981  C   ALA    82     -45.359  17.313  24.069  1.00 34.25      L    C
ATOM   4982  O   ALA    82     -44.597  18.273  23.923  1.00 35.41      L    O
ATOM   4983  N   GLU    83     -45.153  16.145  23.475  1.00 33.73      L    N
ATOM   4984  CA  GLU    83     -43.982  15.936  22.629  1.00 36.46      L    C
ATOM   4985  CB  GLU    83     -43.768  14.438  22.371  1.00 37.92      L    C
ATOM   4986  CG  GLU    83     -44.991  13.694  21.844  1.00 48.23      L    C
ATOM   4987  CD  GLU    83     -45.924  13.198  22.957  1.00 55.83      L    C
ATOM   4988  OE1 GLU    83     -46.852  12.410  22.641  1.00 60.92      L    O
ATOM   4989  OE2 GLU    83     -45.741  13.588  24.140  1.00 54.46      L    O
ATOM   4990  C   GLU    83     -44.070  16.693  21.295  1.00 35.87      L    C
ATOM   4991  O   GLU    83     -43.115  16.696  20.518  1.00 36.46      L    O
ATOM   4992  N   ASP    84     -45.206  17.342  21.040  1.00 33.53      L    N
ATOM   4993  CA  ASP    84     -45.370  18.148  19.830  1.00 32.04      L    C
ATOM   4994  CB  ASP    84     -46.851  18.329  19.482  1.00 29.82      L    C
ATOM   4995  CG  ASP    84     -47.539  17.024  19.156  1.00 33.55      L    C
ATOM   4996  OD1 ASP    84     -46.859  16.092  18.667  1.00 33.27      L    O
ATOM   4997  OD2 ASP    84     -48.763  16.930  19.390  1.00 31.73      L    O
ATOM   4998  C   ASP    84     -44.737  19.528  19.979  1.00 32.06      L    C
ATOM   4999  O   ASP    84     -44.653  20.279  19.003  1.00 30.80      L    O
ATOM   5000  N   GLU    85     -44.309  19.877  21.191  1.00 29.59      L    N
ATOM   5001  CA  GLU    85     -43.660  21.169  21.389  1.00 31.50      L    C
ATOM   5002  CB  GLU    85     -43.317  21.397  22.870  1.00 33.60      L    C
ATOM   5003  CG  GLU    85     -42.876  22.829  23.172  1.00 38.51      L    C
ATOM   5004  CD  GLU    85     -43.034  23.215  24.641  1.00 43.82      L    C
ATOM   5005  OE1 GLU    85     -42.004  23.517  25.290  1.00 47.43      L    O
ATOM   5006  OE2 GLU    85     -44.182  23.229  25.150  1.00 42.38      L    O
ATOM   5007  C   GLU    85     -42.391  21.182  20.549  1.00 29.61      L    C
ATOM   5008  O   GLU    85     -41.542  20.307  20.688  1.00 32.34      L    O
ATOM   5009  N   ALA    86     -42.269  22.164  19.664  1.00 26.98      L    N
ATOM   5010  CA  ALA    86     -41.217  22.135  18.656  1.00 26.63      L    C
ATOM   5011  CB  ALA    86     -41.295  20.824  17.850  1.00 27.34      L    C
ATOM   5012  C   ALA    86     -41.378  23.323  17.725  1.00 27.49      L    C
ATOM   5013  O   ALA    86     -42.335  24.084  17.844  1.00 28.13      L    O
ATOM   5014  N   ASP    87     -40.437  23.480  16.803  1.00 28.02      L    N
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ATOM   5015  CA  ASP    87     -40.565  24.476  15.750  1.00 29.17      L    C
ATOM   5016  CB  ASP    87     -39.227  25.188  15.534  1.00 31.60      L    C
ATOM   5017  CG  ASP    87     -38.845  26.086  16.712  1.00 36.68      L    C
ATOM   5018  OD1 ASP    87     -39.736  26.768  17.260  1.00 40.12      L    O
ATOM   5019  OD2 ASP    87     -37.653  26.111  17.095  1.00 38.12      L    O
ATOM   5020  C   ASP    87     -41.007  23.786  14.458  1.00 28.96      L    C
ATOM   5021  O   ASP    87     -40.577  22.664  14.164  1.00 26.69      L    O
ATOM   5022  N   TYR    88     -41.874  24.452  13.699  1.00 26.76      L    N
ATOM   5023  CA  TYR    88     -42.396  23.884  12.462  1.00 27.47      L    C
ATOM   5024  CB  TYR    88     -43.904  23.641  12.576  1.00 25.61      L    C
ATOM   5025  CG  TYR    88     -44.269  22.601  13.607  1.00 23.78      L    C
ATOM   5026  CD1 TYR    88     -44.328  22.921  14.965  1.00 24.12      L    C
ATOM   5027  CE1 TYR    88     -44.617  21.946  15.920  1.00 22.16      L    C
ATOM   5028  CD2 TYR    88     -44.514  21.288  13.231  1.00 22.59      L    C
ATOM   5029  CE2 TYR    88     -44.802  20.316  14.166  1.00 22.72      L    C
ATOM   5030  CZ  TYR    88     -44.849  20.648  15.511  1.00 22.94      L    C
ATOM   5031  OH  TYR    88     -45.104  19.661  16.437  1.00 21.22      L    O
ATOM   5032  C   TYR    88     -42.117  24.816  11.298  1.00 26.66      L    C
ATOM   5033  O   TYR    88     -42.384  26.008  11.379  1.00 29.21      L    O
ATOM   5034  N   TYR    89     -41.580  24.261  10.219  1.00 27.15      L    N
ATOM   5035  CA  TYR    89     -41.213  25.044   9.044  1.00 25.90      L    C
ATOM   5036  CB  TYR    89     -39.698  24.971   8.814  1.00 26.15      L    C
ATOM   5037  CG  TYR    89     -38.873  25.579   9.931  1.00 28.08      L    C
ATOM   5038  CD1 TYR    89     -38.414  24.801  10.992  1.00 28.94      L    C
ATOM   5039  CE1 TYR    89     -37.671  25.363  12.027  1.00 27.99      L    C
ATOM   5040  CD2 TYR    89     -38.566  26.934   9.934  1.00 27.68      L    C
ATOM   5041  CE2 TYR    89     -37.829  27.503  10.962  1.00 28.70      L    C
ATOM   5042  CZ  TYR    89     -37.384  26.712  12.006  1.00 30.96      L    C
ATOM   5043  OH  TYR    89     -36.651  27.279  13.031  1.00 32.52      L    O
ATOM   5044  C   TYR    89     -41.935  24.510   7.811  1.00 26.61      L    C
ATOM   5045  O   TYR    89     -41.986  23.296   7.584  1.00 24.13      L    O
ATOM   5046  N   CYS    90     -42.493  25.410   7.011  1.00 26.60      L    N
ATOM   5047  CA  CYS    90     -42.966  25.018   5.694  1.00 25.92      L    C
ATOM   5048  C   CYS    90     -41.898  25.294   4.644  1.00 27.13      L    C
ATOM   5049  O   CYS    90     -40.957  26.053   4.877  1.00 27.83      L    O
ATOM   5050  CB  CYS    90     -44.270  25.748   5.342  1.00 29.34      L    C
ATOM   5051  SG  CYS    90     -44.257  27.570   5.342  1.00 38.10      L    S
ATOM   5052  N   GLN    91     -42.036  24.657   3.488  1.00 28.80      L    N
ATOM   5053  CA  GLN    91     -41.044  24.779   2.429  1.00 28.24      L    C
ATOM   5054  CB  GLN    91     -39.966  23.708   2.595  1.00 27.60      L    C
ATOM   5055  CG  GLN    91     -38.890  23.735   1.525  1.00 29.58      L    C
ATOM   5056  CD  GLN    91     -38.225  22.383   1.351  1.00 33.53      L    C
ATOM   5057  OE1 GLN    91     -38.893  21.347   1.360  1.00 30.27      L    O
ATOM   5058  NE2 GLN    91     -36.896  22.382   1.198  1.00 35.14      L    N
ATOM   5059  C   GLN    91     -41.718  24.615   1.078  1.00 29.35      L    C
ATOM   5060  O   GLN    91     -42.679  23.851   0.946  1.00 29.91      L    O
ATOM   5061  N   SER    92     -41.210  25.330   0.076  1.00 29.56      L    N
ATOM   5062  CA  SER    92     -41.704  25.207  -1.293  1.00 31.14      L    C
ATOM   5063  CB  SER    92     -43.013  25.991  -1.451  1.00 32.55      L    C
ATOM   5064  OG  SER    92     -43.443  26.023  -2.802  1.00 34.97      L    O
ATOM   5065  C   SER    92     -40.668  25.731  -2.285  1.00 30.79      L    C
ATOM   5066  O   SER    92     -39.914  26.658  -1.979  1.00 30.97      L    O
ATOM   5067  N   TYR    93     -40.627  25.140  -3.473  1.00 29.05      L    N
ATOM   5068  CA  TYR    93     -39.728  25.633  -4.507  1.00 29.06      L    C
ATOM   5069  CB  TYR    93     -39.677  24.663  -5.698  1.00 28.59      L    C
ATOM   5070  CG  TYR    93     -38.685  25.053  -6.783  1.00 30.48      L    C
ATOM   5071  CD1 TYR    93     -37.317  24.858  -6.609  1.00 31.57      L    C
ATOM   5072  CE1 TYR    93     -36.406  25.209  -7.599  1.00 30.71      L    C
ATOM   5073  CD2 TYR    93     -39.120  25.612  -7.983  1.00 31.67      L    C
ATOM   5074  CE2 TYR    93     -38.220  25.968  -8.984  1.00 30.85      L    C
ATOM   5075  CZ  TYR    93     -36.865  25.765  -8.783  1.00 33.32      L    C
ATOM   5076  OH  TYR    93     -35.969  26.129  -9.760  1.00 32.49      L    O
ATOM   5077  C   TYR    93     -40.233  26.996  -4.958  1.00 29.39      L    C
ATOM   5078  O   TYR    93     -41.441  27.234  -5.017  1.00 27.21      L    O
ATOM   5079  N   ASP    94     -39.303  27.898  -5.248  1.00 29.82      L    N
ATOM   5080  CA  ASP    94     -39.652  29.201  -5.780  1.00 31.94      L    C
ATOM   5081  CB  ASP    94     -39.229  30.295  -4.811  1.00 34.22      L    C
ATOM   5082  CG  ASP    94     -39.679  31.671  -5.256  1.00 39.09      L    C
ATOM   5083  OD1 ASP    94     -40.570  32.253  -4.589  1.00 38.37      L    O
ATOM   5084  OD2 ASP    94     -39.138  32.169  -6.272  1.00 41.24      L    O
ATOM   5085  C   ASP    94     -38.932  29.379  -7.110  1.00 33.39      L    C
ATOM   5086  O   ASP    94     -37.701  29.381  -7.157  1.00 32.83      L    O
ATOM   5087  N   SER    95     -39.694  29.531  -8.189  1.00 32.19      L    N
ATOM   5088  CA  SER    95     -39.098  29.548  -9.519  1.00 35.46      L    C
ATOM   5089  CB  SER    95     -40.176  29.372 -10.598  1.00 33.41      L    C
ATOM   5090  OG  SER    95     -41.217  30.322 -10.442  1.00 37.34      L    O
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ATOM	5091	C	SER	95	-38.274	30.797	-9.811	1.00	35.42	L	C
ATOM	5092	O	SER	95	-37.381	30.757	-10.651	1.00	38.68	L	O
ATOM	5093	N	SER	96	-38.547	31.905	-9.132	1.00	37.35	L	N
ATOM	5094	CA	SER	96	-37.712	33.086	-9.343	1.00	39.64	L	C
ATOM	5095	CB	SER	96	-38.461	34.365	-8.947	1.00	38.48	L	C
ATOM	5096	OG	SER	96	-38.428	34.586	-7.548	1.00	48.03	L	O
ATOM	5097	C	SER	96	-36.378	32.997	-8.589	1.00	40.42	L	C
ATOM	5098	O	SER	96	-35.411	33.664	-8.951	1.00	41.72	L	O
ATOM	5099	N	LEU	97	-36.317	32.164	-7.552	1.00	40.63	L	N
ATOM	5100	CA	LEU	97	-35.085	32.015	-6.776	1.00	39.89	L	C
ATOM	5101	CB	LEU	97	-35.403	32.010	-5.278	1.00	39.69	L	C
ATOM	5102	CG	LEU	97	-36.119	33.256	-4.752	1.00	41.84	L	C
ATOM	5103	CD1	LEU	97	-36.377	33.113	-3.257	1.00	40.69	L	C
ATOM	5104	CD2	LEU	97	-35.271	34.492	-5.034	1.00	39.18	L	C
ATOM	5105	C	LEU	97	-34.330	30.739	-7.142	1.00	40.12	L	C
ATOM	5106	O	LEU	97	-33.166	30.567	-6.775	1.00	38.81	L	O
ATOM	5107	N	SER	98	-35.005	29.847	-7.862	1.00	40.10	L	N
ATOM	5108	CA	SER	98	-34.432	28.559	-8.247	1.00	39.46	L	C
ATOM	5109	CB	SER	98	-33.228	28.768	-9.169	1.00	39.43	L	C
ATOM	5110	OG	SER	98	-33.610	29.450	-10.354	1.00	42.81	L	O
ATOM	5111	C	SER	98	-34.018	27.713	-7.045	1.00	38.54	L	C
ATOM	5112	O	SER	98	-33.073	26.923	-7.123	1.00	38.98	L	O
ATOM	5113	N	GLY	99	-34.728	27.871	-5.934	1.00	37.42	L	N
ATOM	5114	CA	GLY	99	-34.422	27.070	-4.762	1.00	35.97	L	C
ATOM	5115	C	GLY	99	-35.657	26.785	-3.940	1.00	36.31	L	C
ATOM	5116	O	GLY	99	-36.657	27.493	-4.065	1.00	35.39	L	O
ATOM	5117	N	SER	100	-35.588	25.752	-3.100	1.00	36.91	L	N
ATOM	5118	CA	SER	100	-36.707	25.374	-2.246	1.00	37.76	L	C
ATOM	5119	CB	SER	100	-36.765	23.849	-2.076	1.00	39.33	L	C
ATOM	5120	OG	SER	100	-37.335	23.211	-3.212	1.00	39.19	L	O
ATOM	5121	C	SER	100	-36.563	26.035	-0.885	1.00	38.62	L	C
ATOM	5122	O	SER	100	-35.908	25.493	0.012	1.00	40.69	L	O
ATOM	5123	N	VAL	101	-37.197	27.195	-0.735	1.00	35.61	L	N
ATOM	5124	CA	VAL	101	-37.020	28.048	0.428	1.00	34.08	L	C
ATOM	5125	CB	VAL	101	-37.142	29.527	0.033	1.00	34.68	L	C
ATOM	5126	CG1	VAL	101	-36.015	29.890	-0.932	1.00	37.67	L	C
ATOM	5127	CG2	VAL	101	-38.501	29.780	-0.605	1.00	30.50	L	C
ATOM	5128	C	VAL	101	-38.002	27.768	1.563	1.00	33.19	L	C
ATOM	5129	O	VAL	101	-39.047	27.151	1.362	1.00	31.98	L	O
ATOM	5130	N	PHE	102	-37.652	28.246	2.755	1.00	30.75	L	N
ATOM	5131	CA	PHE	102	-38.362	27.915	3.985	1.00	29.44	L	C
ATOM	5132	CB	PHE	102	-37.361	27.473	5.053	1.00	28.91	L	C
ATOM	5133	CG	PHE	102	-36.680	26.179	4.742	1.00	27.81	L	C
ATOM	5134	CD1	PHE	102	-35.472	26.161	4.070	1.00	26.76	L	C
ATOM	5135	CD2	PHE	102	-37.259	24.973	5.110	1.00	26.32	L	C
ATOM	5136	CE1	PHE	102	-34.853	24.960	3.764	1.00	26.61	L	C
ATOM	5137	CE2	PHE	102	-36.645	23.777	4.809	1.00	25.33	L	C
ATOM	5138	CZ	PHE	102	-35.439	23.770	4.133	1.00	25.96	L	C
ATOM	5139	C	PHE	102	-39.158	29.094	4.521	1.00	28.98	L	C
ATOM	5140	O	PHE	102	-38.750	30.244	4.372	1.00	31.15	L	O
ATOM	5141	N	GLY	103	-40.292	28.811	5.154	1.00	28.82	L	N
ATOM	5142	CA	GLY	103	-40.949	29.830	5.956	1.00	27.61	L	C
ATOM	5143	C	GLY	103	-40.094	30.221	7.153	1.00	28.18	L	C
ATOM	5144	O	GLY	103	-39.068	29.593	7.419	1.00	27.21	L	O
ATOM	5145	N	GLY	104	-40.513	31.257	7.877	1.00	29.41	L	N
ATOM	5146	CA	GLY	104	-39.722	31.760	8.987	1.00	30.21	L	C
ATOM	5147	C	GLY	104	-39.801	30.907	10.245	1.00	31.93	L	C
ATOM	5148	O	GLY	104	-39.038	31.114	11.186	1.00	31.09	L	O
ATOM	5149	N	GLY	105	-40.715	29.941	10.262	1.00	31.73	L	N
ATOM	5150	CA	GLY	105	-40.796	29.024	11.385	1.00	30.36	L	C
ATOM	5151	C	GLY	105	-41.890	29.408	12.360	1.00	30.83	L	C
ATOM	5152	O	GLY	105	-42.133	30.591	12.597	1.00	30.41	L	O
ATOM	5153	N	THR	106	-42.557	28.408	12.924	1.00	30.56	L	N
ATOM	5154	CA	THR	106	-43.546	28.648	13.969	1.00	30.39	L	C
ATOM	5155	CB	THR	106	-44.950	28.202	13.538	1.00	30.35	L	C
ATOM	5156	OG1	THR	106	-45.338	28.900	12.354	1.00	32.39	L	O
ATOM	5157	CG2	THR	106	-45.950	28.490	14.635	1.00	30.52	L	C
ATOM	5158	C	THR	106	-43.170	27.865	15.219	1.00	30.74	L	C
ATOM	5159	O	THR	106	-42.953	26.655	15.167	1.00	30.35	L	O
ATOM	5160	N	LYS	107	-43.099	28.568	16.341	1.00	31.45	L	N
ATOM	5161	CA	LYS	107	-42.788	27.954	17.623	1.00	33.01	L	C
ATOM	5162	CB	LYS	107	-42.130	28.999	18.540	1.00	38.62	L	C
ATOM	5163	CG	LYS	107	-41.064	28.452	19.485	1.00	44.72	L	C
ATOM	5164	CD	LYS	107	-41.600	27.310	20.334	1.00	49.04	L	C
ATOM	5165	CE	LYS	107	-40.472	26.415	20.831	1.00	51.13	L	C
ATOM	5166	NZ	LYS	107	-40.985	25.086	21.262	1.00	50.21	L	N

ATOM	5167	C	LYS	107	-44.107	27.486	18.230	1.00	31.74	L	C
ATOM	5168	O	LYS	107	-44.979	28.307	18.538	1.00	32.77	L	O
ATOM	5169	N	LEU	108	-44.273	26.179	18.393	1.00	28.38	L	N
ATOM	5170	CA	LEU	108	-45.486	25.668	19.037	1.00	30.04	L	C
ATOM	5171	CB	LEU	108	-45.970	24.391	18.351	1.00	26.99	L	C
ATOM	5172	CG	LEU	108	-47.289	23.796	18.861	1.00	29.30	L	C
ATOM	5173	CD1	LEU	108	-47.883	22.884	17.802	1.00	29.60	L	C
ATOM	5174	CD2	LEU	108	-47.058	23.018	20.150	1.00	31.06	L	C
ATOM	5175	C	LEU	108	-45.256	25.376	20.515	1.00	29.02	L	C
ATOM	5176	O	LEU	108	-44.342	24.647	20.871	1.00	31.80	L	O
ATOM	5177	N	THR	109	-46.112	25.921	21.367	1.00	30.44	L	N
ATOM	5178	CA	THR	109	-45.992	25.733	22.812	1.00	32.72	L	C
ATOM	5179	CB	THR	109	-45.942	27.101	23.535	1.00	33.32	L	C
ATOM	5180	OG1	THR	109	-44.728	27.776	23.190	1.00	39.35	L	O
ATOM	5181	CG2	THR	109	-45.991	26.924	25.030	1.00	36.60	L	C
ATOM	5182	C	THR	109	-47.173	24.932	23.352	1.00	31.37	L	C
ATOM	5183	O	THR	109	-48.326	25.247	23.056	1.00	32.44	L	O
ATOM	5184	N	VAL	110	-46.890	23.901	24.141	1.00	29.28	L	N
ATOM	5185	CA	VAL	110	-47.952	23.126	24.759	1.00	30.60	L	C
ATOM	5186	CB	VAL	110	-47.589	21.639	24.843	1.00	31.58	L	C
ATOM	5187	CG1	VAL	110	-48.696	20.885	25.564	1.00	31.21	L	C
ATOM	5188	CG2	VAL	110	-47.391	21.068	23.437	1.00	29.51	L	C
ATOM	5189	C	VAL	110	-48.247	23.642	26.163	1.00	32.83	L	C
ATOM	5190	O	VAL	110	-47.389	23.608	27.041	1.00	32.80	L	O
ATOM	5191	N	LEU	111	-49.470	24.119	26.364	1.00	34.22	L	N
ATOM	5192	CA	LEU	111	-49.831	24.834	27.581	1.00	34.04	L	C
ATOM	5193	CB	LEU	111	-50.785	25.985	27.247	1.00	34.30	L	C
ATOM	5194	CG	LEU	111	-50.233	27.051	26.294	1.00	39.19	L	C
ATOM	5195	CD1	LEU	111	-51.313	28.073	25.964	1.00	37.22	L	C
ATOM	5196	CD2	LEU	111	-49.029	27.728	26.934	1.00	38.67	L	C
ATOM	5197	C	LEU	111	-50.492	23.919	28.598	1.00	34.06	L	C
ATOM	5198	O	LEU	111	-50.631	22.719	28.376	1.00	34.37	L	O
ATOM	5199	N	GLY	112	-50.893	24.498	29.724	1.00	33.66	L	N
ATOM	5200	CA	GLY	112	-51.772	23.797	30.632	1.00	32.43	L	C
ATOM	5201	C	GLY	112	-51.139	23.268	31.903	1.00	32.20	L	C
ATOM	5202	O	GLY	112	-51.853	22.922	32.838	1.00	32.07	L	O
ATOM	5203	N	GLN	113	-49.815	23.199	31.965	1.00	31.98	L	N
ATOM	5204	CA	GLN	113	-49.186	22.612	33.145	1.00	33.88	L	C
ATOM	5205	CB	GLN	113	-47.725	22.251	32.853	1.00	34.74	L	C
ATOM	5206	CG	GLN	113	-46.732	23.380	32.993	1.00	38.41	L	C
ATOM	5207	CD	GLN	113	-45.326	22.922	32.653	1.00	42.73	L	C
ATOM	5208	OE1	GLN	113	-44.513	22.659	33.543	1.00	42.57	L	O
ATOM	5209	NE2	GLN	113	-45.034	22.811	31.354	1.00	42.20	L	N
ATOM	5210	C	GLN	113	-49.282	23.548	34.354	1.00	32.67	L	C
ATOM	5211	O	GLN	113	-49.377	24.770	34.208	1.00	30.96	L	O
ATOM	5212	N	PRO	114	-49.282	22.981	35.568	1.00	32.80	L	N
ATOM	5213	CD	PRO	114	-49.223	21.540	35.868	1.00	33.24	L	C
ATOM	5214	CA	PRO	114	-49.519	23.784	36.777	1.00	32.36	L	C
ATOM	5215	CB	PRO	114	-49.539	22.748	37.902	1.00	32.38	L	C
ATOM	5216	CG	PRO	114	-49.909	21.457	37.213	1.00	34.37	L	C
ATOM	5217	C	PRO	114	-48.458	24.863	37.007	1.00	30.82	L	C
ATOM	5218	O	PRO	114	-47.285	24.686	36.677	1.00	26.86	L	O
ATOM	5219	N	LYS	115	-48.874	25.989	37.569	1.00	31.80	L	N
ATOM	5220	CA	LYS	115	-47.916	27.022	37.930	1.00	34.33	L	C
ATOM	5221	CB	LYS	115	-48.634	28.202	38.583	1.00	36.99	L	C
ATOM	5222	CG	LYS	115	-47.748	29.426	38.753	1.00	44.60	L	C
ATOM	5223	CD	LYS	115	-47.982	30.122	40.084	1.00	48.66	L	C
ATOM	5224	CE	LYS	115	-49.028	31.218	39.966	1.00	50.81	L	C
ATOM	5225	NZ	LYS	115	-48.997	32.126	41.157	1.00	52.88	L	N
ATOM	5226	C	LYS	115	-46.879	26.437	38.897	1.00	33.33	L	C
ATOM	5227	O	LYS	115	-47.206	25.588	39.736	1.00	30.94	L	O
ATOM	5228	N	ALA	116	-45.630	26.877	38.762	1.00	32.81	L	N
ATOM	5229	CA	ALA	116	-44.570	26.495	39.697	1.00	33.88	L	C
ATOM	5230	CB	ALA	116	-43.738	25.366	39.111	1.00	30.45	L	C
ATOM	5231	C	ALA	116	-43.678	27.697	40.012	1.00	33.75	L	C
ATOM	5232	O	ALA	116	-43.179	28.368	39.105	1.00	33.41	L	O
ATOM	5233	N	ALA	117	-43.487	27.969	41.300	1.00	34.49	L	N
ATOM	5234	CA	ALA	117	-42.664	29.097	41.733	1.00	34.10	L	C
ATOM	5235	CB	ALA	117	-43.008	29.480	43.181	1.00	34.76	L	C
ATOM	5236	C	ALA	117	-41.188	28.724	41.622	1.00	34.26	L	C
ATOM	5237	O	ALA	117	-40.818	27.561	41.781	1.00	34.36	L	O
ATOM	5238	N	PRO	118	-40.329	29.712	41.331	1.00	34.24	L	N
ATOM	5239	CD	PRO	118	-40.679	31.132	41.151	1.00	33.58	L	C
ATOM	5240	CA	PRO	118	-38.902	29.463	41.114	1.00	35.01	L	C
ATOM	5241	CB	PRO	118	-38.394	30.772	40.517	1.00	34.92	L	C
ATOM	5242	CG	PRO	118	-39.339	31.811	41.039	1.00	34.58	L	C

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ATOM   5243  C   PRO   118     -38.172  29.108  42.403  1.00 37.33      L    C
ATOM   5244  O   PRO   118     -38.483  29.643  43.467  1.00 37.79      L    O
ATOM   5245  N   SER   119     -37.212  28.192  42.295  1.00 37.11      L    N
ATOM   5246  CA  SER   119     -36.175  28.046  43.304  1.00 37.74      L    C
ATOM   5247  CB  SER   119     -35.621  26.622  43.312  1.00 36.71      L    C
ATOM   5248  OG  SER   119     -36.607  25.707  43.742  1.00 45.31      L    O
ATOM   5249  C   SER   119     -35.055  29.006  42.951  1.00 37.01      L    C
ATOM   5250  O   SER   119     -34.615  29.064  41.799  1.00 38.07      L    O
ATOM   5251  N   VAL   120     -34.597  29.756  43.944  1.00 35.51      L    N
ATOM   5252  CA  VAL   120     -33.478  30.666  43.758  1.00 35.22      L    C
ATOM   5253  CB  VAL   120     -33.889  32.126  44.059  1.00 34.18      L    C
ATOM   5254  CG1 VAL   120     -32.680  33.048  43.933  1.00 30.75      L    C
ATOM   5255  CG2 VAL   120     -34.995  32.558  43.103  1.00 33.05      L    C
ATOM   5256  C   VAL   120     -32.338  30.278  44.684  1.00 36.13      L    C
ATOM   5257  O   VAL   120     -32.543  30.053  45.879  1.00 35.93      L    O
ATOM   5258  N   THR   121     -31.134  30.187  44.134  1.00 35.67      L    N
ATOM   5259  CA  THR   121     -29.961  30.097  44.975  1.00 36.07      L    C
ATOM   5260  CB  THR   121     -29.413  28.637  45.022  1.00 38.17      L    C
ATOM   5261  OG1 THR   121     -28.028  28.622  44.670  1.00 43.48      L    O
ATOM   5262  CG2 THR   121     -30.191  27.741  44.092  1.00 38.07      L    C
ATOM   5263  C   THR   121     -28.900  31.093  44.518  1.00 35.24      L    C
ATOM   5264  O   THR   121     -28.695  31.310  43.321  1.00 33.07      L    O
ATOM   5265  N   LEU   122     -28.253  31.728  45.490  1.00 34.06      L    N
ATOM   5266  CA  LEU   122     -27.357  32.847  45.220  1.00 34.60      L    C
ATOM   5267  CB  LEU   122     -27.971  34.136  45.762  1.00 31.62      L    C
ATOM   5268  CG  LEU   122     -27.093  35.388  45.764  1.00 33.67      L    C
ATOM   5269  CD1 LEU   122     -26.790  35.813  44.337  1.00 31.18      L    C
ATOM   5270  CD2 LEU   122     -27.815  36.508  46.519  1.00 34.33      L    C
ATOM   5271  C   LEU   122     -25.979  32.625  45.852  1.00 35.18      L    C
ATOM   5272  O   LEU   122     -25.873  32.339  47.048  1.00 35.07      L    O
ATOM   5273  N   PHE   123     -24.934  32.756  45.040  1.00 34.10      L    N
ATOM   5274  CA  PHE   123     -23.563  32.581  45.503  1.00 33.60      L    C
ATOM   5275  CB  PHE   123     -22.803  31.613  44.598  1.00 32.81      L    C
ATOM   5276  CG  PHE   123     -23.292  30.200  44.673  1.00 33.31      L    C
ATOM   5277  CD1 PHE   123     -24.108  29.683  43.680  1.00 31.54      L    C
ATOM   5278  CD2 PHE   123     -22.919  29.380  45.726  1.00 31.90      L    C
ATOM   5279  CE1 PHE   123     -24.545  28.373  43.731  1.00 32.77      L    C
ATOM   5280  CE2 PHE   123     -23.351  28.066  45.783  1.00 31.56      L    C
ATOM   5281  CZ  PHE   123     -24.165  27.562  44.784  1.00 32.86      L    C
ATOM   5282  C   PHE   123     -22.822  33.902  45.507  1.00 34.23      L    C
ATOM   5283  O   PHE   123     -22.887  34.660  44.541  1.00 33.21      L    O
ATOM   5284  N   PRO   124     -22.085  34.183  46.595  1.00 34.60      L    N
ATOM   5285  CD  PRO   124     -22.022  33.339  47.802  1.00 33.97      L    C
ATOM   5286  CA  PRO   124     -21.179  35.334  46.681  1.00 33.22      L    C
ATOM   5287  CB  PRO   124     -20.827  35.396  48.162  1.00 32.92      L    C
ATOM   5288  CG  PRO   124     -20.911  33.971  48.613  1.00 32.54      L    C
ATOM   5289  C   PRO   124     -19.952  35.072  45.815  1.00 33.35      L    C
ATOM   5290  O   PRO   124     -19.764  33.962  45.318  1.00 32.14      L    O
ATOM   5291  N   PRO   125     -19.100  36.089  45.624  1.00 34.18      L    N
ATOM   5292  CD  PRO   125     -19.242  37.482  46.084  1.00 34.13      L    C
ATOM   5293  CA  PRO   125     -17.823  35.865  44.937  1.00 33.64      L    C
ATOM   5294  CB  PRO   125     -17.180  37.253  44.894  1.00 34.39      L    C
ATOM   5295  CG  PRO   125     -18.291  38.220  45.187  1.00 35.53      L    C
ATOM   5296  C   PRO   125     -16.961  34.878  45.732  1.00 35.03      L    C
ATOM   5297  O   PRO   125     -16.917  34.937  46.962  1.00 35.09      L    O
ATOM   5298  N   SER   126     -16.281  33.973  45.035  1.00 34.42      L    N
ATOM   5299  CA  SER   126     -15.335  33.076  45.691  1.00 34.25      L    C
ATOM   5300  CB  SER   126     -14.937  31.950  44.744  1.00 32.73      L    C
ATOM   5301  OG  SER   126     -14.250  32.467  43.621  1.00 32.43      L    O
ATOM   5302  C   SER   126     -14.093  33.870  46.084  1.00 35.04      L    C
ATOM   5303  O   SER   126     -13.777  34.884  45.461  1.00 33.38      L    O
ATOM   5304  N   SER   127     -13.383  33.412  47.110  1.00 35.77      L    N
ATOM   5305  CA  SER   127     -12.176  34.116  47.534  1.00 37.95      L    C
ATOM   5306  CB  SER   127     -11.653  33.549  48.864  1.00 39.02      L    C
ATOM   5307  OG  SER   127     -11.268  32.195  48.731  1.00 45.05      L    O
ATOM   5308  C   SER   127     -11.100  34.022  46.452  1.00 36.52      L    C
ATOM   5309  O   SER   127     -10.301  34.941  46.276  1.00 35.94      L    O
ATOM   5310  N   GLU   128     -11.099  32.928  45.703  1.00 36.21      L    N
ATOM   5311  CA  GLU   128     -10.172  32.797  44.590  1.00 38.71      L    C
ATOM   5312  CB  GLU   128     -10.288  31.401  43.975  1.00 40.30      L    C
ATOM   5313  CG  GLU   128      -9.137  31.038  43.054  1.00 44.77      L    C
ATOM   5314  CD  GLU   128      -9.217  29.605  42.538  1.00 48.56      L    C
ATOM   5315  OE1 GLU   128      -8.448  29.266  41.610  1.00 48.39      L    O
ATOM   5316  OE2 GLU   128     -10.041  28.817  43.061  1.00 49.98      L    O
ATOM   5317  C   GLU   128     -10.396  33.874  43.514  1.00 40.21      L    C
ATOM   5318  O   GLU   128      -9.436  34.479  43.025  1.00 39.54      L    O
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ATOM   5319  N   GLU   129     -11.652  34.127  43.147  1.00 40.30      L    N
ATOM   5320  CA  GLU   129     -11.927  35.156  42.142  1.00 38.87      L    C
ATOM   5321  CB  GLU   129     -13.406  35.152  41.720  1.00 39.30      L    C
ATOM   5322  CG  GLU   129     -13.717  36.210  40.653  1.00 40.41      L    C
ATOM   5323  CD  GLU   129     -15.192  36.289  40.261  1.00 42.41      L    C
ATOM   5324  OE1 GLU   129     -15.469  36.599  39.081  1.00 44.06      L    O
ATOM   5325  OE2 GLU   129     -16.072  36.055  41.117  1.00 40.48      L    O
ATOM   5326  C   GLU   129     -11.560  36.538  42.681  1.00 38.41      L    C
ATOM   5327  O   GLU   129     -11.107  37.405  41.933  1.00 36.76      L    O
ATOM   5328  N   LEU   130     -11.759  36.746  43.979  1.00 37.71      L    N
ATOM   5329  CA  LEU   130     -11.361  38.003  44.599  1.00 38.42      L    C
ATOM   5330  CB  LEU   130     -11.837  38.042  46.053  1.00 36.50      L    C
ATOM   5331  CG  LEU   130     -13.358  38.169  46.237  1.00 36.84      L    C
ATOM   5332  CD1 LEU   130     -13.723  38.067  47.713  1.00 34.95      L    C
ATOM   5333  CD2 LEU   130     -13.832  39.497  45.657  1.00 33.05      L    C
ATOM   5334  C   LEU   130      -9.844  38.231  44.515  1.00 40.34      L    C
ATOM   5335  O   LEU   130      -9.401  39.348  44.243  1.00 40.94      L    O
ATOM   5336  N   GLN   131      -9.056  37.176  44.730  1.00 41.55      L    N
ATOM   5337  CA  GLN   131      -7.606  37.236  44.532  1.00 43.80      L    C
ATOM   5338  CB  GLN   131      -6.950  35.883  44.844  1.00 43.76      L    C
ATOM   5339  CG  GLN   131      -6.260  35.816  46.191  1.00 47.33      L    C
ATOM   5340  CD  GLN   131      -5.469  37.072  46.514  1.00 47.15      L    C
ATOM   5341  OE1 GLN   131      -5.756  37.757  47.497  1.00 49.05      L    O
ATOM   5342  NE2 GLN   131      -4.470  37.382  45.692  1.00 45.39      L    N
ATOM   5343  C   GLN   131      -7.248  37.626  43.105  1.00 45.27      L    C
ATOM   5344  O   GLN   131      -6.261  38.333  42.876  1.00 46.89      L    O
ATOM   5345  N   ALA   132      -8.039  37.146  42.147  1.00 45.27      L    N
ATOM   5346  CA  ALA   132      -7.868  37.521  40.743  1.00 43.98      L    C
ATOM   5347  CB  ALA   132      -8.552  36.497  39.841  1.00 43.38      L    C
ATOM   5348  C   ALA   132      -8.435  38.915  40.474  1.00 43.57      L    C
ATOM   5349  O   ALA   132      -8.516  39.351  39.327  1.00 42.33      L    O
ATOM   5350  N   ASN   133      -8.845  39.602  41.537  1.00 43.82      L    N
ATOM   5351  CA  ASN   133      -9.273  40.996  41.433  1.00 46.95      L    C
ATOM   5352  CB  ASN   133      -8.155  41.830  40.792  1.00 48.35      L    C
ATOM   5353  CG  ASN   133      -8.282  43.309  41.101  1.00 50.92      L    C
ATOM   5354  OD1 ASN   133      -8.791  43.694  42.158  1.00 51.72      L    O
ATOM   5355  ND2 ASN   133      -7.821  44.150  40.179  1.00 51.45      L    N
ATOM   5356  C   ASN   133     -10.581  41.179  40.642  1.00 46.81      L    C
ATOM   5357  O   ASN   133     -10.751  42.171  39.929  1.00 47.08      L    O
ATOM   5358  N   LYS   134     -11.494  40.218  40.768  1.00 46.18      L    N
ATOM   5359  CA  LYS   134     -12.830  40.324  40.186  1.00 45.08      L    C
ATOM   5360  CB  LYS   134     -12.955  39.437  38.946  1.00 46.32      L    C
ATOM   5361  CG  LYS   134     -11.819  39.552  37.947  1.00 49.14      L    C
ATOM   5362  CD  LYS   134     -11.935  40.811  37.107  1.00 55.33      L    C
ATOM   5363  CE  LYS   134     -11.460  40.559  35.673  1.00 58.41      L    C
ATOM   5364  NZ  LYS   134     -10.414  39.490  35.603  1.00 59.23      L    N
ATOM   5365  C   LYS   134     -13.854  39.864  41.218  1.00 44.89      L    C
ATOM   5366  O   LYS   134     -13.510  39.179  42.181  1.00 45.02      L    O
ATOM   5367  N   ALA   135     -15.112  40.237  41.013  1.00 43.12      L    N
ATOM   5368  CA  ALA   135     -16.199  39.733  41.845  1.00 42.34      L    C
ATOM   5369  CB  ALA   135     -16.485  40.710  42.986  1.00 40.89      L    C
ATOM   5370  C   ALA   135     -17.465  39.497  41.019  1.00 41.64      L    C
ATOM   5371  O   ALA   135     -17.928  40.383  40.299  1.00 42.40      L    O
ATOM   5372  N   THR   136     -18.019  38.295  41.129  1.00 41.17      L    N
ATOM   5373  CA  THR   136     -19.223  37.928  40.392  1.00 36.95      L    C
ATOM   5374  CB  THR   136     -18.910  36.884  39.301  1.00 36.17      L    C
ATOM   5375  OG1 THR   136     -17.877  37.385  38.448  1.00 34.77      L    O
ATOM   5376  CG2 THR   136     -20.149  36.592  38.460  1.00 35.99      L    C
ATOM   5377  C   THR   136     -20.234  37.326  41.349  1.00 35.86      L    C
ATOM   5378  O   THR   136     -19.952  36.323  42.003  1.00 35.40      L    O
ATOM   5379  N   LEU   137     -21.410  37.940  41.434  1.00 35.37      L    N
ATOM   5380  CA  LEU   137     -22.527  37.333  42.140  1.00 34.20      L    C
ATOM   5381  CB  LEU   137     -23.417  38.412  42.758  1.00 36.75      L    C
ATOM   5382  CG  LEU   137     -22.746  39.314  43.798  1.00 40.79      L    C
ATOM   5383  CD1 LEU   137     -23.790  40.073  44.597  1.00 41.82      L    C
ATOM   5384  CD2 LEU   137     -21.929  38.465  44.725  1.00 42.69      L    C
ATOM   5385  C   LEU   137     -23.332  36.481  41.160  1.00 34.75      L    C
ATOM   5386  O   LEU   137     -23.562  36.877  40.013  1.00 33.76      L    O
ATOM   5387  N   VAL   138     -23.748  35.305  41.616  1.00 33.20      L    N
ATOM   5388  CA  VAL   138     -24.366  34.322  40.741  1.00 33.86      L    C
ATOM   5389  CB  VAL   138     -23.496  33.058  40.627  1.00 33.39      L    C
ATOM   5390  CG1 VAL   138     -24.158  32.065  39.679  1.00 31.94      L    C
ATOM   5391  CG2 VAL   138     -22.096  33.436  40.155  1.00 28.69      L    C
ATOM   5392  C   VAL   138     -25.736  33.916  41.261  1.00 34.92      L    C
ATOM   5393  O   VAL   138     -25.851  33.261  42.303  1.00 35.11      L    O
ATOM   5394  N   CYS   139     -26.772  34.310  40.528  1.00 34.33      L    N
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ATOM   5395  CA  CYS   139     -28.145  34.048  40.937  1.00 34.32      L    C
ATOM   5396  C   CYS   139     -28.755  33.014  40.009  1.00 32.61      L    C
ATOM   5397  O   CYS   139     -28.914  33.263  38.816  1.00 32.03      L    O
ATOM   5398  CB  CYS   139     -28.963  35.330  40.868  1.00 36.04      L    C
ATOM   5399  SG  CYS   139     -30.606  35.207  41.630  1.00 39.55      L    S
ATOM   5400  N   LEU   140     -29.092  31.856  40.559  1.00 30.81      L    N
ATOM   5401  CA  LEU   140     -29.556  30.747  39.745  1.00 32.77      L    C
ATOM   5402  CB  LEU   140     -28.722  29.503  40.041  1.00 32.67      L    C
ATOM   5403  CG  LEU   140     -27.225  29.678  39.777  1.00 33.78      L    C
ATOM   5404  CD1 LEU   140     -26.500  28.410  40.172  1.00 31.83      L    C
ATOM   5405  CD2 LEU   140     -26.981  29.995  38.302  1.00 30.83      L    C
ATOM   5406  C   LEU   140     -31.024  30.472  40.018  1.00 33.03      L    C
ATOM   5407  O   LEU   140     -31.432  30.317  41.169  1.00 32.85      L    O
ATOM   5408  N   ILE   141     -31.808  30.409  38.946  1.00 33.23      L    N
ATOM   5409  CA  ILE   141     -33.266  30.360  39.040  1.00 33.94      L    C
ATOM   5410  CB  ILE   141     -33.873  31.630  38.419  1.00 33.58      L    C
ATOM   5411  CG2 ILE   141     -35.333  31.765  38.822  1.00 34.21      L    C
ATOM   5412  CG1 ILE   141     -33.095  32.858  38.899  1.00 32.33      L    C
ATOM   5413  CD1 ILE   141     -33.396  34.114  38.106  1.00 32.35      L    C
ATOM   5414  C   ILE   141     -33.784  29.143  38.277  1.00 33.63      L    C
ATOM   5415  O   ILE   141     -33.506  28.990  37.088  1.00 36.23      L    O
ATOM   5416  N   SER   142     -34.533  28.276  38.947  1.00 32.80      L    N
ATOM   5417  CA  SER   142     -34.925  27.014  38.327  1.00 33.50      L    C
ATOM   5418  CB  SER   142     -33.897  25.918  38.651  1.00 34.71      L    C
ATOM   5419  OG  SER   142     -33.838  25.659  40.040  1.00 39.34      L    O
ATOM   5420  C   SER   142     -36.315  26.537  38.720  1.00 33.10      L    C
ATOM   5421  O   SER   142     -36.918  27.054  39.664  1.00 31.05      L    O
ATOM   5422  N   ASP   143     -36.820  25.562  37.963  1.00 33.73      L    N
ATOM   5423  CA  ASP   143     -38.075  24.877  38.266  1.00 35.27      L    C
ATOM   5424  CB  ASP   143     -37.980  24.159  39.613  1.00 37.99      L    C
ATOM   5425  CG  ASP   143     -36.947  23.050  39.606  1.00 46.04      L    C
ATOM   5426  OD1 ASP   143     -36.195  22.932  40.601  1.00 49.81      L    O
ATOM   5427  OD2 ASP   143     -36.886  22.298  38.604  1.00 46.96      L    O
ATOM   5428  C   ASP   143     -39.301  25.776  38.277  1.00 35.39      L    C
ATOM   5429  O   ASP   143     -40.216  25.564  39.075  1.00 35.57      L    O
ATOM   5430  N   PHE   144     -39.340  26.778  37.408  1.00 32.40      L    N
ATOM   5431  CA  PHE   144     -40.513  27.630  37.392  1.00 33.33      L    C
ATOM   5432  CB  PHE   144     -40.120  29.101  37.632  1.00 32.73      L    C
ATOM   5433  CG  PHE   144     -39.148  29.667  36.624  1.00 32.95      L    C
ATOM   5434  CD1 PHE   144     -39.606  30.394  35.529  1.00 32.15      L    C
ATOM   5435  CD2 PHE   144     -37.776  29.554  36.820  1.00 32.00      L    C
ATOM   5436  CE1 PHE   144     -38.712  31.008  34.649  1.00 32.86      L    C
ATOM   5437  CE2 PHE   144     -36.874  30.164  35.946  1.00 31.42      L    C
ATOM   5438  CZ  PHE   144     -37.345  30.894  34.859  1.00 31.87      L    C
ATOM   5439  C   PHE   144     -41.360  27.491  36.126  1.00 33.15      L    C
ATOM   5440  O   PHE   144     -40.859  27.152  35.051  1.00 31.11      L    O
ATOM   5441  N   TYR   145     -42.658  27.728  36.277  1.00 32.99      L    N
ATOM   5442  CA  TYR   145     -43.570  27.759  35.146  1.00 35.64      L    C
ATOM   5443  CB  TYR   145     -44.099  26.353  34.814  1.00 35.95      L    C
ATOM   5444  CG  TYR   145     -44.958  26.360  33.567  1.00 40.08      L    C
ATOM   5445  CD1 TYR   145     -46.301  26.743  33.623  1.00 40.50      L    C
ATOM   5446  CE1 TYR   145     -47.053  26.893  32.471  1.00 42.12      L    C
ATOM   5447  CD2 TYR   145     -44.399  26.112  32.316  1.00 39.32      L    C
ATOM   5448  CE2 TYR   145     -45.144  26.258  31.158  1.00 41.02      L    C
ATOM   5449  CZ  TYR   145     -46.466  26.653  31.240  1.00 42.27      L    C
ATOM   5450  OH  TYR   145     -47.196  26.833  30.089  1.00 43.82      L    O
ATOM   5451  C   TYR   145     -44.735  28.661  35.499  1.00 35.38      L    C
ATOM   5452  O   TYR   145     -45.261  28.586  36.609  1.00 37.77      L    O
ATOM   5453  N   PRO   146     -45.168  29.521  34.562  1.00 35.04      L    N
ATOM   5454  CD  PRO   146     -46.411  30.290  34.759  1.00 34.49      L    C
ATOM   5455  CA  PRO   146     -44.607  29.714  33.217  1.00 36.14      L    C
ATOM   5456  CB  PRO   146     -45.686  30.514  32.480  1.00 33.39      L    C
ATOM   5457  CG  PRO   146     -46.458  31.194  33.550  1.00 35.09      L    C
ATOM   5458  C   PRO   146     -43.247  30.417  33.179  1.00 38.56      L    C
ATOM   5459  O   PRO   146     -42.752  30.910  34.200  1.00 38.92      L    O
ATOM   5460  N   GLY   147     -42.668  30.477  31.981  1.00 38.91      L    N
ATOM   5461  CA  GLY   147     -41.256  30.772  31.843  1.00 40.73      L    C
ATOM   5462  C   GLY   147     -40.878  32.226  31.670  1.00 41.71      L    C
ATOM   5463  O   GLY   147     -39.990  32.542  30.886  1.00 45.13      L    O
ATOM   5464  N   ALA   148     -41.533  33.117  32.399  1.00 41.10      L    N
ATOM   5465  CA  ALA   148     -41.119  34.510  32.410  1.00 42.96      L    C
ATOM   5466  CB  ALA   148     -42.205  35.384  31.801  1.00 42.15      L    C
ATOM   5467  C   ALA   148     -40.826  34.963  33.838  1.00 43.29      L    C
ATOM   5468  O   ALA   148     -41.658  34.807  34.730  1.00 43.64      L    O
ATOM   5469  N   VAL   149     -39.638  35.517  34.047  1.00 42.89      L    N
ATOM   5470  CA  VAL   149     -39.300  36.155  35.315  1.00 43.55      L    C
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ATOM   5471  CB  VAL   149     -38.333  35.293  36.159  1.00 42.09      L    C
ATOM   5472  CG1 VAL   149     -39.040  34.062  36.679  1.00 40.84      L    C
ATOM   5473  CG2 VAL   149     -37.126  34.903  35.318  1.00 40.82      L    C
ATOM   5474  C   VAL   149     -38.606  37.471  35.027  1.00 44.09      L    C
ATOM   5475  O   VAL   149     -38.039  37.663  33.951  1.00 44.44      L    O
ATOM   5476  N   THR   150     -38.651  38.379  35.990  1.00 44.32      L    N
ATOM   5477  CA  THR   150     -37.788  39.546  35.947  1.00 45.76      L    C
ATOM   5478  CB  THR   150     -38.603  40.854  35.969  1.00 47.68      L    C
ATOM   5479  OG1 THR   150     -39.451  40.866  37.124  1.00 50.74      L    O
ATOM   5480  CG2 THR   150     -39.455  40.971  34.710  1.00 48.08      L    C
ATOM   5481  C   THR   150     -36.871  39.509  37.159  1.00 44.03      L    C
ATOM   5482  O   THR   150     -37.286  39.113  38.251  1.00 42.08      L    O
ATOM   5483  N   VAL   151     -35.623  39.916  36.960  1.00 43.16      L    N
ATOM   5484  CA  VAL   151     -34.645  39.902  38.034  1.00 43.36      L    C
ATOM   5485  CB  VAL   151     -33.424  39.035  37.659  1.00 43.35      L    C
ATOM   5486  CG1 VAL   151     -32.524  38.850  38.880  1.00 42.41      L    C
ATOM   5487  CG2 VAL   151     -33.885  37.694  37.119  1.00 41.25      L    C
ATOM   5488  C   VAL   151     -34.162  41.315  38.343  1.00 43.86      L    C
ATOM   5489  O   VAL   151     -33.789  42.065  37.442  1.00 44.90      L    O
ATOM   5490  N   ALA   152     -34.164  41.671  39.623  1.00 44.46      L    N
ATOM   5491  CA  ALA   152     -33.621  42.953  40.067  1.00 46.25      L    C
ATOM   5492  CB  ALA   152     -34.750  43.846  40.590  1.00 44.32      L    C
ATOM   5493  C   ALA   152     -32.581  42.728  41.167  1.00 46.44      L    C
ATOM   5494  O   ALA   152     -32.771  41.881  42.041  1.00 45.37      L    O
ATOM   5495  N   TRP   153     -31.489  43.488  41.121  1.00 46.96      L    N
ATOM   5496  CA  TRP   153     -30.434  43.375  42.124  1.00 48.34      L    C
ATOM   5497  CB  TRP   153     -29.068  43.258  41.445  1.00 46.62      L    C
ATOM   5498  CG  TRP   153     -28.835  41.977  40.692  1.00 44.35      L    C
ATOM   5499  CD2 TRP   153     -28.153  40.809  41.174  1.00 43.29      L    C
ATOM   5500  CE2 TRP   153     -28.095  39.888  40.106  1.00 42.33      L    C
ATOM   5501  CE3 TRP   153     -27.584  40.454  42.403  1.00 41.90      L    C
ATOM   5502  CD1 TRP   153     -29.158  41.719  39.390  1.00 43.20      L    C
ATOM   5503  NE1 TRP   153     -28.714  40.467  39.030  1.00 41.75      L    N
ATOM   5504  CZ2 TRP   153     -27.487  38.636  40.231  1.00 41.82      L    C
ATOM   5505  CZ3 TRP   153     -26.982  39.210  42.525  1.00 40.30      L    C
ATOM   5506  CH2 TRP   153     -26.938  38.317  41.443  1.00 41.25      L    C
ATOM   5507  C   TRP   153     -30.425  44.586  43.055  1.00 50.76      L    C
ATOM   5508  O   TRP   153     -30.656  45.710  42.619  1.00 51.60      L    O
ATOM   5509  N   LYS   154     -30.158  44.349  44.337  1.00 53.56      L    N
ATOM   5510  CA  LYS   154     -30.028  45.430  45.311  1.00 55.91      L    C
ATOM   5511  CB  LYS   154     -31.100  45.307  46.400  1.00 57.60      L    C
ATOM   5512  CG  LYS   154     -32.529  45.384  45.893  1.00 61.06      L    C
ATOM   5513  CD  LYS   154     -32.750  46.616  45.026  1.00 64.51      L    C
ATOM   5514  CE  LYS   154     -34.157  46.635  44.439  1.00 65.49      L    C
ATOM   5515  NZ  LYS   154     -35.197  46.612  45.509  1.00 67.42      L    N
ATOM   5516  C   LYS   154     -28.649  45.439  45.974  1.00 56.74      L    C
ATOM   5517  O   LYS   154     -28.189  44.416  46.490  1.00 55.15      L    O
ATOM   5518  N   ALA   155     -27.998  46.599  45.952  1.00 57.64      L    N
ATOM   5519  CA  ALA   155     -26.844  46.854  46.809  1.00 59.43      L    C
ATOM   5520  CB  ALA   155     -25.912  47.859  46.147  1.00 58.00      L    C
ATOM   5521  C   ALA   155     -27.352  47.399  48.142  1.00 60.59      L    C
ATOM   5522  O   ALA   155     -27.797  48.546  48.228  1.00 60.44      L    O
ATOM   5523  N   ASP   156     -27.292  46.568  49.176  1.00 62.39      L    N
ATOM   5524  CA  ASP   156     -27.989  46.848  50.426  1.00 65.83      L    C
ATOM   5525  CB  ASP   156     -27.503  48.165  51.032  1.00 67.21      L    C
ATOM   5526  CG  ASP   156     -26.129  48.044  51.654  1.00 69.56      L    C
ATOM   5527  OD1 ASP   156     -25.959  47.193  52.554  1.00 70.11      L    O
ATOM   5528  OD2 ASP   156     -25.220  48.796  51.239  1.00 71.44      L    O
ATOM   5529  C   ASP   156     -29.492  46.918  50.195  1.00 67.34      L    C
ATOM   5530  O   ASP   156     -30.177  45.893  50.179  1.00 68.08      L    O
ATOM   5531  N   SER   157     -30.004  48.131  50.012  1.00 68.19      L    N
ATOM   5532  CA  SER   157     -31.422  48.321  49.739  1.00 69.31      L    C
ATOM   5533  CB  SER   157     -32.119  48.937  50.954  1.00 70.08      L    C
ATOM   5534  OG  SER   157     -32.192  48.008  52.025  1.00 71.57      L    O
ATOM   5535  C   SER   157     -31.650  49.199  48.513  1.00 69.35      L    C
ATOM   5536  O   SER   157     -32.765  49.654  48.265  1.00 69.73      L    O
ATOM   5537  N   SER   158     -30.591  49.433  47.747  1.00 68.83      L    N
ATOM   5538  CA  SER   158     -30.677  50.297  46.580  1.00 69.49      L    C
ATOM   5539  CB  SER   158     -29.621  51.395  46.679  1.00 70.91      L    C
ATOM   5540  OG  SER   158     -29.610  51.946  47.986  1.00 73.20      L    O
ATOM   5541  C   SER   158     -30.488  49.512  45.285  1.00 69.20      L    C
ATOM   5542  O   SER   158     -29.701  48.572  45.225  1.00 69.63      L    O
ATOM   5543  N   PRO   159     -31.215  49.896  44.229  1.00 68.97      L    N
ATOM   5544  CD  PRO   159     -32.254  50.939  44.259  1.00 69.29      L    C
ATOM   5545  CA  PRO   159     -31.157  49.225  42.926  1.00 68.40      L    C
ATOM   5546  CB  PRO   159     -32.184  49.980  42.083  1.00 68.16      L    C
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ATOM	5547	CG	PRO	159	-33.113	50.583	43.082	1.00	69.30	L	C
ATOM	5548	C	PRO	159	-29.771	49.269	42.294	1.00	68.38	L	C
ATOM	5549	O	PRO	159	-29.129	50.320	42.249	1.00	68.62	L	O
ATOM	5550	N	VAL	160	-29.317	48.120	41.804	1.00	67.89	L	N
ATOM	5551	CA	VAL	160	-28.076	48.042	41.047	1.00	67.89	L	C
ATOM	5552	CB	VAL	160	-27.268	46.788	41.426	1.00	67.44	L	C
ATOM	5553	CG1	VAL	160	-25.984	46.736	40.614	1.00	66.24	L	C
ATOM	5554	CG2	VAL	160	-26.970	46.790	42.917	1.00	66.87	L	C
ATOM	5555	C	VAL	160	-28.415	47.962	39.566	1.00	68.75	L	C
ATOM	5556	O	VAL	160	-29.066	47.019	39.128	1.00	70.43	L	O
ATOM	5557	N	LYS	161	-27.968	48.945	38.796	1.00	68.73	L	N
ATOM	5558	CA	LYS	161	-28.304	48.998	37.378	1.00	68.60	L	C
ATOM	5559	CB	LYS	161	-28.436	50.458	36.927	1.00	73.13	L	C
ATOM	5560	CG	LYS	161	-29.469	51.270	37.711	1.00	77.34	L	C
ATOM	5561	CD	LYS	161	-30.885	50.731	37.505	1.00	80.36	L	C
ATOM	5562	CE	LYS	161	-31.912	51.540	38.294	1.00	82.15	L	C
ATOM	5563	NZ	LYS	161	-33.299	51.001	38.144	1.00	82.95	L	N
ATOM	5564	C	LYS	161	-27.254	48.291	36.523	1.00	65.92	L	C
ATOM	5565	O	LYS	161	-27.562	47.346	35.787	1.00	65.61	L	O
ATOM	5566	N	ALA	162	-26.012	48.754	36.634	1.00	61.33	L	N
ATOM	5567	CA	ALA	162	-24.935	48.296	35.763	1.00	57.37	L	C
ATOM	5568	CB	ALA	162	-23.839	49.356	35.699	1.00	57.49	L	C
ATOM	5569	C	ALA	162	-24.344	46.963	36.219	1.00	53.70	L	C
ATOM	5570	O	ALA	162	-24.505	46.561	37.368	1.00	51.79	L	O
ATOM	5571	N	GLY	163	-23.663	46.283	35.303	1.00	50.45	L	N
ATOM	5572	CA	GLY	163	-22.992	45.044	35.646	1.00	49.48	L	C
ATOM	5573	C	GLY	163	-23.885	43.813	35.674	1.00	48.47	L	C
ATOM	5574	O	GLY	163	-23.441	42.737	36.078	1.00	49.78	L	O
ATOM	5575	N	VAL	164	-25.137	43.960	35.252	1.00	44.89	L	N
ATOM	5576	CA	VAL	164	-26.079	42.849	35.282	1.00	42.87	L	C
ATOM	5577	CB	VAL	164	-27.466	43.304	35.757	1.00	41.38	L	C
ATOM	5578	CG1	VAL	164	-28.429	42.123	35.757	1.00	40.11	L	C
ATOM	5579	CG2	VAL	164	-27.365	43.909	37.146	1.00	40.00	L	C
ATOM	5580	C	VAL	164	-26.237	42.197	33.920	1.00	42.51	L	C
ATOM	5581	O	VAL	164	-26.474	42.878	32.926	1.00	43.92	L	O
ATOM	5582	N	GLU	165	-26.106	40.875	33.874	1.00	41.72	L	N
ATOM	5583	CA	GLU	165	-26.428	40.126	32.664	1.00	43.48	L	C
ATOM	5584	CB	GLU	165	-25.143	39.769	31.911	1.00	45.09	L	C
ATOM	5585	CG	GLU	165	-24.375	41.016	31.483	1.00	50.70	L	C
ATOM	5586	CD	GLU	165	-23.153	40.719	30.637	1.00	54.19	L	C
ATOM	5587	OE1	GLU	165	-23.033	41.317	29.542	1.00	54.85	L	O
ATOM	5588	OE2	GLU	165	-22.312	39.899	31.070	1.00	55.72	L	O
ATOM	5589	C	GLU	165	-27.238	38.873	32.984	1.00	42.87	L	C
ATOM	5590	O	GLU	165	-26.797	38.015	33.752	1.00	42.63	L	O
ATOM	5591	N	THR	166	-28.430	38.792	32.394	1.00	41.04	L	N
ATOM	5592	CA	THR	166	-29.392	37.732	32.681	1.00	40.42	L	C
ATOM	5593	CB	THR	166	-30.700	38.326	33.233	1.00	40.61	L	C
ATOM	5594	OG1	THR	166	-30.414	39.093	34.406	1.00	41.13	L	O
ATOM	5595	CG2	THR	166	-31.691	37.226	33.580	1.00	40.33	L	C
ATOM	5596	C	THR	166	-29.719	36.945	31.415	1.00	40.37	L	C
ATOM	5597	O	THR	166	-29.941	37.532	30.360	1.00	42.10	L	O
ATOM	5598	N	THR	167	-29.749	35.620	31.513	1.00	41.03	L	N
ATOM	5599	CA	THR	167	-30.116	34.790	30.365	1.00	40.58	L	C
ATOM	5600	CB	THR	167	-29.722	33.308	30.567	1.00	39.43	L	C
ATOM	5601	OG1	THR	167	-30.455	32.766	31.671	1.00	39.95	L	O
ATOM	5602	CG2	THR	167	-28.233	33.176	30.832	1.00	38.27	L	C
ATOM	5603	C	THR	167	-31.627	34.845	30.149	1.00	41.37	L	C
ATOM	5604	O	THR	167	-32.373	35.320	31.010	1.00	41.43	L	O
ATOM	5605	N	THR	168	-32.078	34.363	28.996	1.00	41.45	L	N
ATOM	5606	CA	THR	168	-33.509	34.207	28.760	1.00	42.31	L	C
ATOM	5607	CB	THR	168	-33.852	34.322	27.256	1.00	44.42	L	C
ATOM	5608	OG1	THR	168	-33.082	33.364	26.522	1.00	48.18	L	O
ATOM	5609	CG2	THR	168	-33.535	35.723	26.732	1.00	44.90	L	C
ATOM	5610	C	THR	168	-33.922	32.831	29.259	1.00	40.42	L	C
ATOM	5611	O	THR	168	-33.178	31.860	29.112	1.00	40.27	L	O
ATOM	5612	N	PRO	169	-35.116	32.729	29.858	1.00	40.18	L	N
ATOM	5613	CD	PRO	169	-36.045	33.834	30.151	1.00	40.79	L	C
ATOM	5614	CA	PRO	169	-35.595	31.453	30.400	1.00	41.42	L	C
ATOM	5615	CB	PRO	169	-37.008	31.776	30.879	1.00	39.94	L	C
ATOM	5616	CG	PRO	169	-36.956	33.241	31.200	1.00	41.04	L	C
ATOM	5617	C	PRO	169	-35.571	30.338	29.364	1.00	42.24	L	C
ATOM	5618	O	PRO	169	-35.869	30.553	28.193	1.00	45.17	L	O
ATOM	5619	N	SER	170	-35.207	29.145	29.805	1.00	42.33	L	N
ATOM	5620	CA	SER	170	-35.041	28.016	28.907	1.00	43.07	L	C
ATOM	5621	CB	SER	170	-33.561	27.872	28.562	1.00	42.97	L	C
ATOM	5622	OG	SER	170	-33.297	26.630	27.950	1.00	50.77	L	O

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ATOM   5623  C   SER   170     -35.566  26.746  29.582  1.00 43.51      L    C
ATOM   5624  O   SER   170     -35.396  26.564  30.790  1.00 43.82      L    O
ATOM   5625  N   LYS   171     -36.211  25.876  28.809  1.00 43.46      L    N
ATOM   5626  CA  LYS   171     -36.836  24.676  29.359  1.00 44.64      L    C
ATOM   5627  CB  LYS   171     -37.741  24.007  28.317  1.00 46.55      L    C
ATOM   5628  CG  LYS   171     -39.099  24.659  28.140  1.00 51.02      L    C
ATOM   5629  CD  LYS   171     -40.179  23.923  28.923  1.00 52.77      L    C
ATOM   5630  CE  LYS   171     -41.558  24.174  28.315  1.00 54.67      L    C
ATOM   5631  NZ  LYS   171     -42.624  23.309  28.902  1.00 54.14      L    N
ATOM   5632  C   LYS   171     -35.805  23.664  29.833  1.00 44.02      L    C
ATOM   5633  O   LYS   171     -34.858  23.350  29.119  1.00 43.67      L    O
ATOM   5634  N   GLN   172     -36.007  23.153  31.041  1.00 44.49      L    N
ATOM   5635  CA  GLN   172     -35.185  22.077  31.583  1.00 46.21      L    C
ATOM   5636  CB  GLN   172     -35.218  22.112  33.116  1.00 45.47      L    C
ATOM   5637  CG  GLN   172     -34.806  23.449  33.714  1.00 49.31      L    C
ATOM   5638  CD  GLN   172     -35.245  23.619  35.167  1.00 49.94      L    C
ATOM   5639  OE1 GLN   172     -34.665  24.403  35.909  1.00 52.52      L    O
ATOM   5640  NE2 GLN   172     -36.273  22.885  35.570  1.00 51.29      L    N
ATOM   5641  C   GLN   172     -35.736  20.743  31.093  1.00 45.91      L    C
ATOM   5642  O   GLN   172     -36.790  20.692  30.461  1.00 46.76      L    O
ATOM   5643  N   SER   173     -35.031  19.662  31.396  1.00 46.60      L    N
ATOM   5644  CA  SER   173     -35.463  18.341  30.961  1.00 48.58      L    C
ATOM   5645  CB  SER   173     -34.335  17.324  31.157  1.00 49.25      L    C
ATOM   5646  OG  SER   173     -34.118  17.066  32.535  1.00 52.49      L    O
ATOM   5647  C   SER   173     -36.715  17.877  31.711  1.00 48.45      L    C
ATOM   5648  O   SER   173     -37.363  16.911  31.307  1.00 48.69      L    O
ATOM   5649  N   ASN   174     -37.058  18.562  32.799  1.00 47.11      L    N
ATOM   5650  CA  ASN   174     -38.284  18.243  33.526  1.00 47.32      L    C
ATOM   5651  CB  ASN   174     -38.067  18.376  35.032  1.00 48.35      L    C
ATOM   5652  CG  ASN   174     -37.959  19.818  35.483  1.00 51.01      L    C
ATOM   5653  OD1 ASN   174     -37.810  20.733  34.666  1.00 50.68      L    O
ATOM   5654  ND2 ASN   174     -38.036  20.032  36.794  1.00 52.49      L    N
ATOM   5655  C   ASN   174     -39.426  19.154  33.093  1.00 47.13      L    C
ATOM   5656  O   ASN   174     -40.484  19.183  33.721  1.00 47.39      L    O
ATOM   5657  N   ASN   175     -39.188  19.912  32.028  1.00 46.42      L    N
ATOM   5658  CA  ASN   175     -40.231  20.697  31.378  1.00 46.60      L    C
ATOM   5659  CB  ASN   175     -41.476  19.840  31.148  1.00 49.67      L    C
ATOM   5660  CG  ASN   175     -42.214  20.236  29.886  1.00 56.34      L    C
ATOM   5661  OD1 ASN   175     -43.406  20.564  29.920  1.00 58.64      L    O
ATOM   5662  ND2 ASN   175     -41.502  20.218  28.757  1.00 57.45      L    N
ATOM   5663  C   ASN   175     -40.621  21.969  32.126  1.00 44.32      L    C
ATOM   5664  O   ASN   175     -41.609  22.620  31.789  1.00 42.56      L    O
ATOM   5665  N   LYS   176     -39.847  22.322  33.144  1.00 42.39      L    N
ATOM   5666  CA  LYS   176     -39.974  23.638  33.753  1.00 40.88      L    C
ATOM   5667  CB  LYS   176     -39.993  23.517  35.281  1.00 41.57      L    C
ATOM   5668  CG  LYS   176     -41.086  22.592  35.806  1.00 43.43      L    C
ATOM   5669  CD  LYS   176     -41.149  22.596  37.330  1.00 46.57      L    C
ATOM   5670  CE  LYS   176     -41.815  21.331  37.867  1.00 48.69      L    C
ATOM   5671  NZ  LYS   176     -42.250  21.472  39.295  1.00 52.64      L    N
ATOM   5672  C   LYS   176     -38.802  24.500  33.290  1.00 39.00      L    C
ATOM   5673  O   LYS   176     -37.914  24.020  32.580  1.00 36.87      L    O
ATOM   5674  N   TYR   177     -38.804  25.768  33.686  1.00 37.05      L    N
ATOM   5675  CA  TYR   177     -37.856  26.731  33.143  1.00 37.79      L    C
ATOM   5676  CB  TYR   177     -38.582  28.028  32.787  1.00 40.04      L    C
ATOM   5677  CG  TYR   177     -39.386  27.955  31.509  1.00 42.10      L    C
ATOM   5678  CD1 TYR   177     -38.803  28.262  30.285  1.00 43.92      L    C
ATOM   5679  CE1 TYR   177     -39.535  28.227  29.114  1.00 46.21      L    C
ATOM   5680  CD2 TYR   177     -40.732  27.604  31.527  1.00 43.08      L    C
ATOM   5681  CE2 TYR   177     -41.477  27.568  30.361  1.00 46.97      L    C
ATOM   5682  CZ  TYR   177     -40.870  27.882  29.153  1.00 47.58      L    C
ATOM   5683  OH  TYR   177     -41.600  27.858  27.987  1.00 48.95      L    O
ATOM   5684  C   TYR   177     -36.682  27.054  34.065  1.00 36.65      L    C
ATOM   5685  O   TYR   177     -36.783  26.952  35.291  1.00 35.52      L    O
ATOM   5686  N   ALA   178     -35.571  27.457  33.458  1.00 34.98      L    N
ATOM   5687  CA  ALA   178     -34.397  27.889  34.205  1.00 34.14      L    C
ATOM   5688  CB  ALA   178     -33.345  26.777  34.220  1.00 33.79      L    C
ATOM   5689  C   ALA   178     -33.804  29.155  33.599  1.00 34.93      L    C
ATOM   5690  O   ALA   178     -33.840  29.362  32.380  1.00 34.79      L    O
ATOM   5691  N   ALA   179     -33.252  30.000  34.461  1.00 32.77      L    N
ATOM   5692  CA  ALA   179     -32.551  31.192  34.019  1.00 31.61      L    C
ATOM   5693  CB  ALA   179     -33.519  32.369  33.943  1.00 30.08      L    C
ATOM   5694  C   ALA   179     -31.450  31.478  35.024  1.00 32.24      L    C
ATOM   5695  O   ALA   179     -31.486  30.976  36.148  1.00 31.98      L    O
ATOM   5696  N   SER   180     -30.468  32.277  34.629  1.00 32.46      L    N
ATOM   5697  CA  SER   180     -29.469  32.730  35.585  1.00 34.62      L    C
ATOM   5698  CB  SER   180     -28.191  31.887  35.475  1.00 34.30      L    C
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ATOM   5699  OG  SER   180     -27.821  31.682  34.130  1.00 36.12      L    O
ATOM   5700  C   SER   180     -29.149  34.201  35.401  1.00 35.73      L    C
ATOM   5701  O   SER   180     -29.371  34.762  34.328  1.00 36.20      L    O
ATOM   5702  N   SER   181     -28.648  34.827  36.464  1.00 35.66      L    N
ATOM   5703  CA  SER   181     -28.306  36.242  36.428  1.00 35.32      L    C
ATOM   5704  CB  SER   181     -29.420  37.066  37.085  1.00 35.39      L    C
ATOM   5705  OG  SER   181     -29.219  38.452  36.863  1.00 35.35      L    O
ATOM   5706  C   SER   181     -26.975  36.503  37.134  1.00 34.93      L    C
ATOM   5707  O   SER   181     -26.740  36.028  38.246  1.00 34.66      L    O
ATOM   5708  N   TYR   182     -26.110  37.263  36.474  1.00 34.88      L    N
ATOM   5709  CA  TYR   182     -24.768  37.537  36.970  1.00 34.05      L    C
ATOM   5710  CB  TYR   182     -23.739  37.082  35.936  1.00 33.06      L    C
ATOM   5711  CG  TYR   182     -23.721  35.591  35.710  1.00 33.67      L    C
ATOM   5712  CD1 TYR   182     -24.573  34.994  34.787  1.00 33.90      L    C
ATOM   5713  CE1 TYR   182     -24.556  33.619  34.580  1.00 32.99      L    C
ATOM   5714  CD2 TYR   182     -22.850  34.775  36.422  1.00 34.60      L    C
ATOM   5715  CE2 TYR   182     -22.823  33.407  36.226  1.00 33.92      L    C
ATOM   5716  CZ  TYR   182     -23.675  32.832  35.304  1.00 34.85      L    C
ATOM   5717  OH  TYR   182     -23.624  31.471  35.101  1.00 35.11      L    O
ATOM   5718  C   TYR   182     -24.576  39.027  37.246  1.00 35.65      L    C
ATOM   5719  O   TYR   182     -24.817  39.863  36.373  1.00 34.81      L    O
ATOM   5720  N   LEU   183     -24.136  39.358  38.456  1.00 35.39      L    N
ATOM   5721  CA  LEU   183     -23.780  40.739  38.778  1.00 36.48      L    C
ATOM   5722  CB  LEU   183     -24.485  41.185  40.062  1.00 36.53      L    C
ATOM   5723  CG  LEU   183     -24.120  42.570  40.611  1.00 38.34      L    C
ATOM   5724  CD1 LEU   183     -24.315  43.637  39.541  1.00 38.29      L    C
ATOM   5725  CD2 LEU   183     -24.983  42.871  41.831  1.00 37.55      L    C
ATOM   5726  C   LEU   183     -22.269  40.871  38.946  1.00 37.69      L    C
ATOM   5727  O   LEU   183     -21.681  40.268  39.847  1.00 38.05      L    O
ATOM   5728  N   SER   184     -21.648  41.650  38.067  1.00 38.46      L    N
ATOM   5729  CA  SER   184     -20.215  41.907  38.142  1.00 40.81      L    C
ATOM   5730  CB  SER   184     -19.639  42.113  36.741  1.00 39.79      L    C
ATOM   5731  OG  SER   184     -19.775  40.942  35.960  1.00 42.53      L    O
ATOM   5732  C   SER   184     -19.913  43.138  38.992  1.00 42.63      L    C
ATOM   5733  O   SER   184     -20.460  44.216  38.759  1.00 44.23      L    O
ATOM   5734  N   LEU   185     -19.036  42.963  39.977  1.00 44.38      L    N
ATOM   5735  CA  LEU   185     -18.597  44.046  40.854  1.00 44.18      L    C
ATOM   5736  CB  LEU   185     -19.093  43.804  42.276  1.00 43.90      L    C
ATOM   5737  CG  LEU   185     -20.592  43.694  42.518  1.00 45.77      L    C
ATOM   5738  CD1 LEU   185     -20.840  43.370  43.987  1.00 43.80      L    C
ATOM   5739  CD2 LEU   185     -21.267  45.005  42.125  1.00 46.33      L    C
ATOM   5740  C   LEU   185     -17.069  44.087  40.879  1.00 45.19      L    C
ATOM   5741  O   LEU   185     -16.414  43.094  40.556  1.00 45.27      L    O
ATOM   5742  N   THR   186     -16.502  45.225  41.271  1.00 44.94      L    N
ATOM   5743  CA  THR   186     -15.103  45.247  41.691  1.00 44.94      L    C
ATOM   5744  CB  THR   186     -14.512  46.671  41.708  1.00 44.97      L    C
ATOM   5745  OG1 THR   186     -15.145  47.439  42.742  1.00 47.27      L    O
ATOM   5746  CG2 THR   186     -14.720  47.353  40.367  1.00 42.76      L    C
ATOM   5747  C   THR   186     -15.067  44.711  43.115  1.00 44.48      L    C
ATOM   5748  O   THR   186     -16.047  44.825  43.859  1.00 43.11      L    O
ATOM   5749  N   PRO   187     -13.937  44.113  43.515  1.00 44.61      L    N
ATOM   5750  CD  PRO   187     -12.753  43.786  42.702  1.00 43.46      L    C
ATOM   5751  CA  PRO   187     -13.813  43.620  44.890  1.00 45.61      L    C
ATOM   5752  CB  PRO   187     -12.374  43.113  44.959  1.00 43.07      L    C
ATOM   5753  CG  PRO   187     -12.048  42.759  43.546  1.00 44.14      L    C
ATOM   5754  C   PRO   187     -14.098  44.714  45.917  1.00 47.37      L    C
ATOM   5755  O   PRO   187     -14.677  44.452  46.973  1.00 47.85      L    O
ATOM   5756  N   GLU   188     -13.707  45.941  45.597  1.00 49.99      L    N
ATOM   5757  CA  GLU   188     -13.931  47.066  46.500  1.00 54.63      L    C
ATOM   5758  CB  GLU   188     -13.236  48.323  45.963  1.00 57.78      L    C
ATOM   5759  CG  GLU   188     -11.728  48.174  45.779  1.00 64.11      L    C
ATOM   5760  CD  GLU   188     -11.354  47.335  44.562  1.00 67.50      L    C
ATOM   5761  OE1 GLU   188     -10.157  47.000  44.411  1.00 70.08      L    O
ATOM   5762  OE2 GLU   188     -12.252  47.012  43.756  1.00 69.12      L    O
ATOM   5763  C   GLU   188     -15.424  47.342  46.695  1.00 54.97      L    C
ATOM   5764  O   GLU   188     -15.875  47.570  47.818  1.00 54.27      L    O
ATOM   5765  N   GLN   189     -16.186  47.318  45.602  1.00 54.96      L    N
ATOM   5766  CA  GLN   189     -17.634  47.478  45.688  1.00 54.99      L    C
ATOM   5767  CB  GLN   189     -18.266  47.452  44.297  1.00 57.33      L    C
ATOM   5768  CG  GLN   189     -17.986  48.677  43.461  1.00 59.74      L    C
ATOM   5769  CD  GLN   189     -18.586  48.570  42.076  1.00 62.10      L    C
ATOM   5770  OE1 GLN   189     -18.126  47.785  41.244  1.00 62.33      L    O
ATOM   5771  NE2 GLN   189     -19.623  49.359  41.819  1.00 63.40      L    N
ATOM   5772  C   GLN   189     -18.245  46.370  46.533  1.00 54.40      L    C
ATOM   5773  O   GLN   189     -19.102  46.623  47.379  1.00 54.55      L    O
ATOM   5774  N   TRP   190     -17.803  45.139  46.298  1.00 53.18      L    N
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ATOM   5775  CA  TRP   190     -18.328  43.996  47.031  1.00 52.69      L    C
ATOM   5776  CB  TRP   190     -17.647  42.713  46.555  1.00 47.71      L    C
ATOM   5777  CG  TRP   190     -17.835  41.541  47.469  1.00 43.39      L    C
ATOM   5778  CD2 TRP   190     -19.078  40.931  47.852  1.00 42.46      L    C
ATOM   5779  CE2 TRP   190     -18.767  39.839  48.690  1.00 41.15      L    C
ATOM   5780  CE3 TRP   190     -20.420  41.201  47.568  1.00 40.32      L    C
ATOM   5781  CD1 TRP   190     -16.853  40.815  48.076  1.00 42.75      L    C
ATOM   5782  NE1 TRP   190     -17.403  39.789  48.810  1.00 40.87      L    N
ATOM   5783  CZ2 TRP   190     -19.749  39.017  49.246  1.00 39.96      L    C
ATOM   5784  CZ3 TRP   190     -21.395  40.381  48.123  1.00 39.31      L    C
ATOM   5785  CH2 TRP   190     -21.054  39.306  48.951  1.00 37.86      L    C
ATOM   5786  C   TRP   190     -18.122  44.161  48.532  1.00 55.45      L    C
ATOM   5787  O   TRP   190     -19.014  43.858  49.325  1.00 56.54      L    O
ATOM   5788  N   LYS   191     -16.949  44.647  48.922  1.00 57.84      L    N
ATOM   5789  CA  LYS   191     -16.606  44.715  50.337  1.00 61.22      L    C
ATOM   5790  CB  LYS   191     -15.087  44.624  50.514  1.00 63.09      L    C
ATOM   5791  CG  LYS   191     -14.517  43.262  50.141  1.00 68.04      L    C
ATOM   5792  CD  LYS   191     -13.238  42.951  50.908  1.00 71.58      L    C
ATOM   5793  CE  LYS   191     -12.009  43.532  50.217  1.00 73.94      L    C
ATOM   5794  NZ  LYS   191     -11.653  42.782  48.975  1.00 75.18      L    N
ATOM   5795  C   LYS   191     -17.142  45.962  51.037  1.00 61.69      L    C
ATOM   5796  O   LYS   191     -17.204  46.008  52.264  1.00 61.30      L    O
ATOM   5797  N   SER   192     -17.545  46.962  50.259  1.00 62.65      L    N
ATOM   5798  CA  SER   192     -17.975  48.237  50.824  1.00 63.95      L    C
ATOM   5799  CB  SER   192     -17.613  49.382  49.874  1.00 64.65      L    C
ATOM   5800  OG  SER   192     -18.392  49.335  48.692  1.00 67.19      L    O
ATOM   5801  C   SER   192     -19.467  48.315  51.161  1.00 64.72      L    C
ATOM   5802  O   SER   192     -19.935  49.335  51.673  1.00 66.00      L    O
ATOM   5803  N   HIS   193     -20.217  47.253  50.874  1.00 63.86      L    N
ATOM   5804  CA  HIS   193     -21.638  47.219  51.216  1.00 61.95      L    C
ATOM   5805  CB  HIS   193     -22.485  46.954  49.970  1.00 61.37      L    C
ATOM   5806  CG  HIS   193     -22.486  48.084  48.988  1.00 61.60      L    C
ATOM   5807  CD2 HIS   193     -23.325  49.136  48.841  1.00 61.56      L    C
ATOM   5808  ND1 HIS   193     -21.535  48.211  47.998  1.00 61.98      L    N
ATOM   5809  CE1 HIS   193     -21.789  49.293  47.283  1.00 62.58      L    C
ATOM   5810  NE2 HIS   193     -22.870  49.872  47.773  1.00 62.31      L    N
ATOM   5811  C   HIS   193     -21.924  46.155  52.260  1.00 62.02      L    C
ATOM   5812  O   HIS   193     -21.148  45.216  52.428  1.00 62.20      L    O
ATOM   5813  N   ARG   194     -23.040  46.305  52.965  1.00 62.45      L    N
ATOM   5814  CA  ARG   194     -23.416  45.343  53.991  1.00 63.53      L    C
ATOM   5815  CB  ARG   194     -24.500  45.926  54.902  1.00 68.20      L    C
ATOM   5816  CG  ARG   194     -23.971  46.895  55.941  1.00 75.45      L    C
ATOM   5817  CD  ARG   194     -23.055  46.173  56.922  1.00 80.85      L    C
ATOM   5818  NE  ARG   194     -22.122  47.082  57.584  1.00 85.64      L    N
ATOM   5819  CZ  ARG   194     -21.136  46.687  58.386  1.00 87.72      L    C
ATOM   5820  NH1 ARG   194     -20.332  47.584  58.947  1.00 88.22      L    N
ATOM   5821  NH2 ARG   194     -20.953  45.394  58.629  1.00 88.28      L    N
ATOM   5822  C   ARG   194     -23.916  44.049  53.369  1.00 61.25      L    C
ATOM   5823  O   ARG   194     -23.696  42.964  53.910  1.00 60.80      L    O
ATOM   5824  N   SER   195     -24.595  44.164  52.232  1.00 57.80      L    N
ATOM   5825  CA  SER   195     -25.120  42.984  51.562  1.00 55.09      L    C
ATOM   5826  CB  SER   195     -26.280  42.393  52.369  1.00 55.10      L    C
ATOM   5827  OG  SER   195     -27.376  43.289  52.411  1.00 57.11      L    O
ATOM   5828  C   SER   195     -25.581  43.272  50.142  1.00 52.03      L    C
ATOM   5829  O   SER   195     -25.760  44.423  49.748  1.00 51.53      L    O
ATOM   5830  N   TYR   196     -25.757  42.205  49.374  1.00 48.88      L    N
ATOM   5831  CA  TYR   196     -26.331  42.298  48.044  1.00 45.63      L    C
ATOM   5832  CB  TYR   196     -25.279  41.968  46.989  1.00 44.45      L    C
ATOM   5833  CG  TYR   196     -24.395  43.139  46.626  1.00 44.49      L    C
ATOM   5834  CD1 TYR   196     -24.664  43.904  45.501  1.00 43.92      L    C
ATOM   5835  CE1 TYR   196     -23.850  44.957  45.140  1.00 46.40      L    C
ATOM   5836  CD2 TYR   196     -23.279  43.464  47.390  1.00 45.08      L    C
ATOM   5837  CE2 TYR   196     -22.451  44.524  47.035  1.00 45.84      L    C
ATOM   5838  CZ  TYR   196     -22.742  45.263  45.907  1.00 47.07      L    C
ATOM   5839  OH  TYR   196     -21.920  46.301  45.516  1.00 48.23      L    O
ATOM   5840  C   TYR   196     -27.493  41.326  47.946  1.00 44.90      L    C
ATOM   5841  O   TYR   196     -27.504  40.290  48.614  1.00 44.93      L    O
ATOM   5842  N   SER   197     -28.480  41.669  47.126  1.00 44.07      L    N
ATOM   5843  CA  SER   197     -29.666  40.838  47.001  1.00 44.08      L    C
ATOM   5844  CB  SER   197     -30.846  41.485  47.727  1.00 43.76      L    C
ATOM   5845  OG  SER   197     -30.752  41.272  49.125  1.00 46.25      L    O
ATOM   5846  C   SER   197     -30.043  40.562  45.556  1.00 43.65      L    C
ATOM   5847  O   SER   197     -29.923  41.432  44.687  1.00 42.68      L    O
ATOM   5848  N   CYS   198     -30.490  39.335  45.311  1.00 42.68      L    N
ATOM   5849  CA  CYS   198     -31.085  38.966  44.037  1.00 43.42      L    C
ATOM   5850  C   CYS   198     -32.590  38.845  44.260  1.00 42.81      L    C
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ATOM   5851  O   CYS   198     -33.036  38.049  45.089  1.00 41.88      L    O
ATOM   5852  CB  CYS   198     -30.516  37.624  43.548  1.00 42.55      L    C
ATOM   5853  SG  CYS   198     -31.115  37.164  41.887  1.00 48.59      L    S
ATOM   5854  N   GLN   199     -33.368  39.641  43.532  1.00 42.44      L    N
ATOM   5855  CA  GLN   199     -34.826  39.605  43.650  1.00 43.18      L    C
ATOM   5856  CB  GLN   199     -35.370  41.007  43.922  1.00 45.67      L    C
ATOM   5857  CG  GLN   199     -34.995  41.547  45.290  1.00 53.84      L    C
ATOM   5858  CD  GLN   199     -35.634  42.891  45.584  1.00 56.85      L    C
ATOM   5859  OE1 GLN   199     -35.855  43.699  44.681  1.00 60.04      L    O
ATOM   5860  NE2 GLN   199     -35.935  43.136  46.852  1.00 58.12      L    N
ATOM   5861  C   GLN   199     -35.462  39.057  42.381  1.00 41.40      L    C
ATOM   5862  O   GLN   199     -35.324  39.639  41.306  1.00 40.06      L    O
ATOM   5863  N   VAL   200     -36.160  37.935  42.508  1.00 40.36      L    N
ATOM   5864  CA  VAL   200     -36.772  37.303  41.347  1.00 39.58      L    C
ATOM   5865  CB  VAL   200     -36.363  35.811  41.230  1.00 40.32      L    C
ATOM   5866  CG1 VAL   200     -37.035  35.177  40.010  1.00 37.77      L    C
ATOM   5867  CG2 VAL   200     -34.842  35.699  41.120  1.00 38.20      L    C
ATOM   5868  C   VAL   200     -38.284  37.396  41.433  1.00 39.21      L    C
ATOM   5869  O   VAL   200     -38.897  36.911  42.388  1.00 37.45      L    O
ATOM   5870  N   THR   201     -38.880  38.029  40.429  1.00 39.72      L    N
ATOM   5871  CA  THR   201     -40.323  38.206  40.389  1.00 40.93      L    C
ATOM   5872  CB  THR   201     -40.698  39.680  40.082  1.00 43.40      L    C
ATOM   5873  OG1 THR   201     -40.139  40.532  41.092  1.00 45.08      L    O
ATOM   5874  CG2 THR   201     -42.218  39.857  40.073  1.00 43.33      L    C
ATOM   5875  C   THR   201     -40.935  37.296  39.332  1.00 40.49      L    C
ATOM   5876  O   THR   201     -40.502  37.278  38.176  1.00 39.58      L    O
ATOM   5877  N   HIS   202     -41.942  36.538  39.748  1.00 41.15      L    N
ATOM   5878  CA  HIS   202     -42.586  35.550  38.891  1.00 41.11      L    C
ATOM   5879  CB  HIS   202     -42.032  34.156  39.196  1.00 38.98      L    C
ATOM   5880  CG  HIS   202     -42.664  33.063  38.394  1.00 36.71      L    C
ATOM   5881  CD2 HIS   202     -42.498  32.696  37.101  1.00 35.64      L    C
ATOM   5882  ND1 HIS   202     -43.575  32.179  38.930  1.00 35.58      L    N
ATOM   5883  CE1 HIS   202     -43.941  31.311  38.003  1.00 35.45      L    C
ATOM   5884  NE2 HIS   202     -43.301  31.602  36.883  1.00 35.15      L    N
ATOM   5885  C   HIS   202     -44.081  35.572  39.165  1.00 42.13      L    C
ATOM   5886  O   HIS   202     -44.516  35.276  40.279  1.00 41.36      L    O
ATOM   5887  N   GLU   203     -44.862  35.931  38.151  1.00 44.96      L    N
ATOM   5888  CA  GLU   203     -46.310  36.022  38.298  1.00 47.24      L    C
ATOM   5889  CB  GLU   203     -46.907  34.628  38.489  1.00 49.44      L    C
ATOM   5890  CG  GLU   203     -46.537  33.646  37.394  1.00 53.20      L    C
ATOM   5891  CD  GLU   203     -47.209  33.974  36.076  1.00 57.10      L    C
ATOM   5892  OE1 GLU   203     -46.488  34.219  35.082  1.00 59.14      L    O
ATOM   5893  OE2 GLU   203     -48.460  33.987  36.038  1.00 57.31      L    O
ATOM   5894  C   GLU   203     -46.676  36.900  39.486  1.00 47.57      L    C
ATOM   5895  O   GLU   203     -47.514  36.529  40.306  1.00 47.36      L    O
ATOM   5896  N   GLY   203     -46.031  38.059  39.586  1.00 49.08      L    N
ATOM   5897  CA  GLY   203     -46.380  39.009  40.626  1.00 50.03      L    C
ATOM   5898  C   GLY   203     -45.999  38.603  42.040  1.00 52.56      L    C
ATOM   5899  O   GLY   203     -46.399  39.264  43.000  1.00 54.19      L    O
ATOM   5900  N   SER   205     -45.243  37.519  42.189  1.00 52.78      L    N
ATOM   5901  CA  SER   205     -44.651  37.192  43.484  1.00 53.25      L    C
ATOM   5902  CB  SER   205     -45.060  35.790  43.934  1.00 54.26      L    C
ATOM   5903  OG  SER   205     -46.365  35.790  44.481  1.00 57.58      L    O
ATOM   5904  C   SER   205     -43.135  37.280  43.423  1.00 53.40      L    C
ATOM   5905  O   SER   205     -42.511  36.793  42.476  1.00 53.90      L    O
ATOM   5906  N   THR   206     -42.548  37.902  44.439  1.00 53.20      L    N
ATOM   5907  CA  THR   206     -41.107  38.107  44.486  1.00 54.04      L    C
ATOM   5908  CB  THR   206     -40.781  39.557  44.891  1.00 54.25      L    C
ATOM   5909  OG1 THR   206     -41.343  40.455  43.926  1.00 55.24      L    O
ATOM   5910  CG2 THR   206     -39.279  39.771  44.948  1.00 54.82      L    C
ATOM   5911  C   THR   206     -40.415  37.147  45.457  1.00 53.61      L    C
ATOM   5912  O   THR   206     -40.846  36.985  46.599  1.00 53.73      L    O
ATOM   5913  N   VAL   207     -39.351  36.501  44.987  1.00 52.25      L    N
ATOM   5914  CA  VAL   207     -38.490  35.690  45.848  1.00 51.34      L    C
ATOM   5915  CB  VAL   207     -38.309  34.254  45.282  1.00 51.23      L    C
ATOM   5916  CG1 VAL   207     -37.331  33.472  46.137  1.00 50.68      L    C
ATOM   5917  CG2 VAL   207     -39.642  33.535  45.240  1.00 51.24      L    C
ATOM   5918  C   VAL   207     -37.120  36.365  45.941  1.00 51.56      L    C
ATOM   5919  O   VAL   207     -36.562  36.801  44.930  1.00 50.04      L    O
ATOM   5920  N   GLU   208     -36.582  36.451  47.154  1.00 51.89      L    N
ATOM   5921  CA  GLU   208     -35.353  37.203  47.389  1.00 51.48      L    C
ATOM   5922  CB  GLU   208     -35.661  38.430  48.241  1.00 53.42      L    C
ATOM   5923  CG  GLU   208     -34.455  39.296  48.538  1.00 58.86      L    C
ATOM   5924  CD  GLU   208     -34.835  40.595  49.224  1.00 61.76      L    C
ATOM   5925  OE1 GLU   208     -34.754  41.657  48.569  1.00 63.24      L    O
ATOM   5926  OE2 GLU   208     -35.218  40.554  50.415  1.00 62.32      L    O
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ATOM   5927  C   GLU   208     -34.260  36.375  48.066  1.00 50.33      L    C
ATOM   5928  O   GLU   208     -34.530  35.605  48.989  1.00 49.28      L    O
ATOM   5929  N   LYS   209     -33.026  36.535  47.601  1.00 47.90      L    N
ATOM   5930  CA  LYS   209     -31.877  35.983  48.310  1.00 47.26      L    C
ATOM   5931  CB  LYS   209     -31.271  34.810  47.530  1.00 47.11      L    C
ATOM   5932  CG  LYS   209     -32.148  33.570  47.496  1.00 45.45      L    C
ATOM   5933  CD  LYS   209     -32.621  33.211  48.887  1.00 46.72      L    C
ATOM   5934  CE  LYS   209     -33.750  32.188  48.858  1.00 48.50      L    C
ATOM   5935  NZ  LYS   209     -33.244  30.791  48.874  1.00 49.58      L    N
ATOM   5936  C   LYS   209     -30.825  37.067  48.529  1.00 46.93      L    C
ATOM   5937  O   LYS   209     -30.685  37.986  47.714  1.00 44.32      L    O
ATOM   5938  N   THR   210     -30.096  36.952  49.636  1.00 46.89      L    N
ATOM   5939  CA  THR   210     -29.125  37.968  50.037  1.00 48.05      L    C
ATOM   5940  CB  THR   210     -29.661  38.817  51.222  1.00 49.81      L    C
ATOM   5941  OG1 THR   210     -30.865  39.487  50.831  1.00 50.72      L    O
ATOM   5942  CG2 THR   210     -28.634  39.857  51.643  1.00 50.82      L    C
ATOM   5943  C   THR   210     -27.805  37.330  50.470  1.00 47.03      L    C
ATOM   5944  O   THR   210     -27.796  36.316  51.170  1.00 45.40      L    O
ATOM   5945  N   VAL   211     -26.692  37.926  50.057  1.00 46.63      L    N
ATOM   5946  CA  VAL   211     -25.389  37.516  50.565  1.00 46.45      L    C
ATOM   5947  CB  VAL   211     -24.565  36.770  49.494  1.00 44.37      L    C
ATOM   5948  CG1 VAL   211     -25.186  35.408  49.225  1.00 41.67      L    C
ATOM   5949  CG2 VAL   211     -24.489  37.602  48.217  1.00 40.70      L    C
ATOM   5950  C   VAL   211     -24.580  38.701  51.066  1.00 48.37      L    C
ATOM   5951  O   VAL   211     -24.732  39.823  50.577  1.00 48.59      L    O
ATOM   5952  N   ALA   212     -23.722  38.441  52.048  1.00 50.94      L    N
ATOM   5953  CA  ALA   212     -22.915  39.485  52.676  1.00 52.66      L    C
ATOM   5954  CB  ALA   212     -23.324  39.647  54.135  1.00 51.32      L    C
ATOM   5955  C   ALA   212     -21.431  39.150  52.585  1.00 53.53      L    C
ATOM   5956  O   ALA   212     -21.037  37.991  52.706  1.00 52.26      L    O
ATOM   5957  N   PRO   213     -20.588  40.172  52.383  1.00 55.64      L    N
ATOM   5958  CD  PRO   213     -20.964  41.593  52.338  1.00 56.63      L    C
ATOM   5959  CA  PRO   213     -19.137  39.980  52.293  1.00 59.09      L    C
ATOM   5960  CB  PRO   213     -18.597  41.391  52.069  1.00 57.17      L    C
ATOM   5961  CG  PRO   213     -19.661  42.294  52.577  1.00 57.07      L    C
ATOM   5962  C   PRO   213     -18.579  39.337  53.554  1.00 63.09      L    C
ATOM   5963  O   PRO   213     -17.587  38.605  53.511  1.00 63.69      L    O
ATOM   5964  N   THR   214     -19.236  39.607  54.675  1.00 67.26      L    N
ATOM   5965  CA  THR   214     -18.898  38.972  55.939  1.00 72.25      L    C
ATOM   5966  CB  THR   214     -19.825  39.478  57.069  1.00 73.76      L    C
ATOM   5967  OG1 THR   214     -19.832  40.913  57.072  1.00 74.88      L    O
ATOM   5968  CG2 THR   214     -19.336  38.979  58.429  1.00 74.89      L    C
ATOM   5969  C   THR   214     -19.025  37.447  55.821  1.00 73.85      L    C
ATOM   5970  O   THR   214     -19.975  36.886  56.412  1.00 75.17      L    O
ATOM   5971  OXT THR   214     -18.178  36.832  55.130  1.00 74.44      L    O
TER    5972       THR   214                                             L
ATOM   5973  CB  GLU     1     -30.422   3.027   8.715  1.00 67.00      H    C
ATOM   5974  CG  GLU     1     -29.516   3.883   9.599  1.00 72.68      H    C
ATOM   5975  CD  GLU     1     -30.286   4.614  10.699  1.00 76.76      H    C
ATOM   5976  OE1 GLU     1     -30.875   3.938  11.574  1.00 78.40      H    O
ATOM   5977  OE2 GLU     1     -30.305   5.867  10.687  1.00 78.19      H    O
ATOM   5978  C   GLU     1     -29.301   3.794   6.619  1.00 59.84      H    C
ATOM   5979  O   GLU     1     -28.098   4.037   6.505  1.00 59.47      H    O
ATOM   5980  N   GLU     1     -28.667   1.616   7.662  1.00 63.51      H    N
ATOM   5981  CA  GLU     1     -29.785   2.571   7.395  1.00 63.39      H    C
ATOM   5982  N   VAL     2     -30.249   4.558   6.086  1.00 56.40      H    N
ATOM   5983  CA  VAL     2     -29.937   5.786   5.366  1.00 53.61      H    C
ATOM   5984  CB  VAL     2     -31.204   6.398   4.751  1.00 53.06      H    C
ATOM   5985  CG1 VAL     2     -30.873   7.721   4.084  1.00 53.81      H    C
ATOM   5986  CG2 VAL     2     -31.808   5.430   3.747  1.00 52.96      H    C
ATOM   5987  C   VAL     2     -29.313   6.798   6.314  1.00 52.68      H    C
ATOM   5988  O   VAL     2     -29.805   7.001   7.422  1.00 53.56      H    O
ATOM   5989  N   GLN     3     -28.231   7.438   5.887  1.00 49.43      H    N
ATOM   5990  CA  GLN     3     -27.479   8.274   6.805  1.00 48.34      H    C
ATOM   5991  CB  GLN     3     -26.566   7.385   7.649  1.00 51.60      H    C
ATOM   5992  CG  GLN     3     -25.834   8.110   8.751  1.00 57.66      H    C
ATOM   5993  CD  GLN     3     -25.334   7.163   9.826  1.00 61.96      H    C
ATOM   5994  OE1 GLN     3     -25.022   7.586  10.944  1.00 63.82      H    O
ATOM   5995  NE2 GLN     3     -25.257   5.873   9.496  1.00 62.05      H    N
ATOM   5996  C   GLN     3     -26.663   9.367   6.121  1.00 44.78      H    C
ATOM   5997  O   GLN     3     -26.083   9.154   5.056  1.00 45.81      H    O
ATOM   5998  N   LEU     4     -26.622  10.540   6.745  1.00 41.09      H    N
ATOM   5999  CA  LEU     4     -25.808  11.649   6.257  1.00 39.82      H    C
ATOM   6000  CB  LEU     4     -26.701  12.732   5.635  1.00 36.60      H    C
ATOM   6001  CG  LEU     4     -27.484  12.382   4.368  1.00 36.08      H    C
ATOM   6002  CD1 LEU     4     -28.454  13.513   4.027  1.00 34.06      H    C
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ATOM   6003  CD2 LEU     4     -26.512  12.144   3.226  1.00 32.76      H     C
ATOM   6004  C   LEU     4     -25.009  12.253   7.413  1.00 39.72      H     C
ATOM   6005  O   LEU     4     -25.575  12.613   8.444  1.00 39.93      H     O
ATOM   6006  N   VAL     5     -23.696  12.365   7.241  1.00 39.98      H     N
ATOM   6007  CA  VAL     5     -22.839  12.906   8.293  1.00 39.49      H     C
ATOM   6008  CB  VAL     5     -21.879  11.827   8.851  1.00 40.46      H     C
ATOM   6009  CG1 VAL     5     -21.035  12.426   9.971  1.00 37.54      H     C
ATOM   6010  CG2 VAL     5     -22.672  10.619   9.354  1.00 38.37      H     C
ATOM   6011  C   VAL     5     -21.991  14.059   7.774  1.00 40.34      H     C
ATOM   6012  O   VAL     5     -21.056  13.851   7.004  1.00 40.18      H     O
ATOM   6013  N   GLU     6     -22.308  15.278   8.188  1.00 40.67      H     N
ATOM   6014  CA  GLU     6     -21.511  16.411   7.744  1.00 43.08      H     C
ATOM   6015  CB  GLU     6     -22.383  17.671   7.589  1.00 42.43      H     C
ATOM   6016  CG  GLU     6     -23.333  17.966   8.728  1.00 47.10      H     C
ATOM   6017  CD  GLU     6     -24.611  17.139   8.680  1.00 45.96      H     C
ATOM   6018  OE1 GLU     6     -24.620  16.045   9.272  1.00 46.73      H     O
ATOM   6019  OE2 GLU     6     -25.606  17.582   8.064  1.00 43.63      H     O
ATOM   6020  C   GLU     6     -20.343  16.668   8.689  1.00 42.63      H     C
ATOM   6021  O   GLU     6     -20.410  16.352   9.876  1.00 45.51      H     O
ATOM   6022  N   SER     7     -19.258  17.215   8.151  1.00 41.61      H     N
ATOM   6023  CA  SER     7     -18.100  17.544   8.967  1.00 41.73      H     C
ATOM   6024  CB  SER     7     -17.167  16.334   9.090  1.00 43.65      H     C
ATOM   6025  OG  SER     7     -16.636  15.958   7.832  1.00 47.20      H     O
ATOM   6026  C   SER     7     -17.341  18.722   8.383  1.00 40.62      H     C
ATOM   6027  O   SER     7     -17.662  19.201   7.294  1.00 39.51      H     O
ATOM   6028  N   GLY     8     -16.345  19.195   9.126  1.00 39.23      H     N
ATOM   6029  CA  GLY     8     -15.489  20.261   8.640  1.00 35.58      H     C
ATOM   6030  C   GLY     8     -15.757  21.589   9.309  1.00 36.50      H     C
ATOM   6031  O   GLY     8     -15.050  22.566   9.069  1.00 37.45      H     O
ATOM   6032  N   GLY     9     -16.781  21.642  10.152  1.00 36.88      H     N
ATOM   6033  CA  GLY     9     -17.098  22.895  10.815  1.00 39.47      H     C
ATOM   6034  C   GLY     9     -15.964  23.359  11.717  1.00 40.73      H     C
ATOM   6035  O   GLY     9     -15.073  22.579  12.053  1.00 41.05      H     O
ATOM   6036  N   GLY    10     -15.991  24.628  12.105  1.00 40.13      H     N
ATOM   6037  CA  GLY    10     -14.982  25.132  13.014  1.00 39.76      H     C
ATOM   6038  C   GLY    10     -15.118  26.619  13.266  1.00 41.15      H     C
ATOM   6039  O   GLY    10     -16.118  27.239  12.892  1.00 41.81      H     O
ATOM   6040  N   LEU    11     -14.106  27.189  13.914  1.00 40.63      H     N
ATOM   6041  CA  LEU    11     -14.038  28.628  14.137  1.00 40.05      H     C
ATOM   6042  CB  LEU    11     -13.486  28.926  15.537  1.00 39.42      H     C
ATOM   6043  CG  LEU    11     -13.247  30.405  15.850  1.00 40.30      H     C
ATOM   6044  CD1 LEU    11     -14.555  31.157  15.728  1.00 39.60      H     C
ATOM   6045  CD2 LEU    11     -12.673  30.564  17.258  1.00 42.60      H     C
ATOM   6046  C   LEU    11     -13.109  29.217  13.087  1.00 39.22      H     C
ATOM   6047  O   LEU    11     -12.065  28.642  12.792  1.00 38.39      H     O
ATOM   6048  N   VAL    12     -13.493  30.356  12.521  1.00 39.30      H     N
ATOM   6049  CA  VAL    12     -12.696  31.006  11.489  1.00 41.06      H     C
ATOM   6050  CB  VAL    12     -13.127  30.525  10.062  1.00 43.20      H     C
ATOM   6051  CG1 VAL    12     -14.583  30.861   9.809  1.00 44.60      H     C
ATOM   6052  CG2 VAL    12     -12.266  31.172   9.000  1.00 45.13      H     C
ATOM   6053  C   VAL    12     -12.890  32.511  11.617  1.00 40.57      H     C
ATOM   6054  O   VAL    12     -13.887  32.962  12.179  1.00 40.30      H     O
ATOM   6055  N   LYS    13     -11.934  33.283  11.111  1.00 41.09      H     N
ATOM   6056  CA  LYS    13     -12.029  34.738  11.137  1.00 42.69      H     C
ATOM   6057  CB  LYS    13     -10.633  35.361  11.253  1.00 46.79      H     C
ATOM   6058  CG  LYS    13      -9.867  34.948  12.507  1.00 50.67      H     C
ATOM   6059  CD  LYS    13      -8.787  35.953  12.854  0.50 53.26      H     C
ATOM   6060  CE  LYS    13      -8.152  35.619  14.192  1.00 56.49      H     C
ATOM   6061  NZ  LYS    13      -9.187  35.477  15.251  1.00 58.69      H     N
ATOM   6062  C   LYS    13     -12.712  35.268   9.883  1.00 42.31      H     C
ATOM   6063  O   LYS    13     -12.663  34.645   8.823  1.00 41.76      H     O
ATOM   6064  N   PRO    14     -13.348  36.444   9.987  1.00 41.71      H     N
ATOM   6065  CD  PRO    14     -13.507  37.249  11.210  1.00 40.26      H     C
ATOM   6066  CA  PRO    14     -13.974  37.078   8.822  1.00 40.68      H     C
ATOM   6067  CB  PRO    14     -14.351  38.466   9.331  1.00 40.52      H     C
ATOM   6068  CG  PRO    14     -14.540  38.266  10.813  1.00 41.11      H     C
ATOM   6069  C   PRO    14     -13.008  37.139   7.646  1.00 42.52      H     C
ATOM   6070  O   PRO    14     -11.828  37.437   7.817  1.00 42.90      H     O
ATOM   6071  N   GLY    15     -13.513  36.839   6.452  1.00 42.59      H     N
ATOM   6072  CA  GLY    15     -12.668  36.859   5.275  1.00 40.18      H     C
ATOM   6073  C   GLY    15     -12.003  35.524   5.013  1.00 40.77      H     C
ATOM   6074  O   GLY    15     -11.419  35.320   3.948  1.00 41.52      H     O
ATOM   6075  N   GLY    16     -12.097  34.608   5.974  1.00 40.21      H     N
ATOM   6076  CA  GLY    16     -11.460  33.309   5.822  1.00 42.04      H     C
ATOM   6077  C   GLY    16     -12.291  32.279   5.067  1.00 43.65      H     C
ATOM   6078  O   GLY    16     -13.333  32.611   4.497  1.00 43.64      H     O
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ATOM	6079	N	SER	17	-11.829	31.029	5.076	1.00	44.25	H	N
ATOM	6080	CA	SER	17	-12.407	29.961	4.261	1.00	45.74	H	C
ATOM	6081	CB	SER	17	-11.515	29.681	3.050	1.00	46.55	H	C
ATOM	6082	OG	SER	17	-11.340	30.848	2.267	1.00	53.54	H	O
ATOM	6083	C	SER	17	-12.576	28.662	5.047	1.00	45.37	H	C
ATOM	6084	O	SER	17	-11.792	28.372	5.946	1.00	44.90	H	O
ATOM	6085	N	LEU	18	-13.592	27.881	4.681	1.00	44.78	H	N
ATOM	6086	CA	LEU	18	-13.834	26.557	5.255	1.00	44.09	H	C
ATOM	6087	CB	LEU	18	-14.857	26.641	6.391	1.00	44.85	H	C
ATOM	6088	CG	LEU	18	-14.385	26.754	7.838	1.00	47.60	H	C
ATOM	6089	CD1	LEU	18	-15.602	26.870	8.755	1.00	46.16	H	C
ATOM	6090	CD2	LEU	18	-13.554	25.526	8.203	1.00	48.80	H	C
ATOM	6091	C	LEU	18	-14.386	25.624	4.183	1.00	43.53	H	C
ATOM	6092	O	LEU	18	-15.068	26.062	3.262	1.00	44.97	H	O
ATOM	6093	N	ARG	19	-14.106	24.336	4.315	1.00	41.93	H	N
ATOM	6094	CA	ARG	19	-14.658	23.350	3.407	1.00	41.54	H	C
ATOM	6095	CB	ARG	19	-13.538	22.673	2.617	1.00	42.94	H	C
ATOM	6096	CG	ARG	19	-14.030	21.678	1.573	1.00	46.58	H	C
ATOM	6097	CD	ARG	19	-12.969	21.451	0.511	1.00	51.36	H	C
ATOM	6098	NE	ARG	19	-13.459	20.676	-0.627	1.00	56.49	H	N
ATOM	6099	CZ	ARG	19	-13.334	19.357	-0.746	1.00	59.18	H	C
ATOM	6100	NH1	ARG	19	-13.807	18.737	-1.821	1.00	59.16	H	N
ATOM	6101	NH2	ARG	19	-12.743	18.653	0.213	1.00	59.69	H	N
ATOM	6102	C	ARG	19	-15.454	22.300	4.172	1.00	40.18	H	C
ATOM	6103	O	ARG	19	-14.884	21.482	4.898	1.00	39.83	H	O
ATOM	6104	N	LEU	20	-16.773	22.316	4.002	1.00	37.32	H	N
ATOM	6105	CA	LEU	20	-17.617	21.320	4.647	1.00	35.94	H	C
ATOM	6106	CB	LEU	20	-19.007	21.894	4.928	1.00	33.09	H	C
ATOM	6107	CG	LEU	20	-19.027	23.242	5.656	1.00	35.63	H	C
ATOM	6108	CD1	LEU	20	-20.474	23.659	5.917	1.00	34.30	H	C
ATOM	6109	CD2	LEU	20	-18.241	23.140	6.976	1.00	32.60	H	C
ATOM	6110	C	LEU	20	-17.731	20.093	3.763	1.00	35.92	H	C
ATOM	6111	O	LEU	20	-17.699	20.190	2.535	1.00	37.48	H	O
ATOM	6112	N	SER	21	-17.848	18.936	4.396	1.00	35.54	H	N
ATOM	6113	CA	SER	21	-18.112	17.699	3.685	1.00	37.66	H	C
ATOM	6114	CB	SER	21	-16.935	16.730	3.826	1.00	38.97	H	C
ATOM	6115	OG	SER	21	-15.752	17.291	3.290	1.00	45.86	H	O
ATOM	6116	C	SER	21	-19.356	17.061	4.274	1.00	38.28	H	C
ATOM	6117	O	SER	21	-19.740	17.356	5.404	1.00	37.83	H	O
ATOM	6118	N	CYS	22	-19.976	16.184	3.495	1.00	39.37	H	N
ATOM	6119	CA	CYS	22	-21.137	15.428	3.930	1.00	42.63	H	C
ATOM	6120	C	CYS	22	-20.974	14.049	3.305	1.00	42.53	H	C
ATOM	6121	O	CYS	22	-20.881	13.921	2.078	1.00	41.03	H	O
ATOM	6122	CB	CYS	22	-22.413	16.125	3.431	1.00	46.05	H	C
ATOM	6123	SG	CYS	22	-24.012	15.257	3.610	1.00	55.21	H	S
ATOM	6124	N	ALA	23	-20.901	13.019	4.145	1.00	40.59	H	N
ATOM	6125	CA	ALA	23	-20.748	11.658	3.645	1.00	41.14	H	C
ATOM	6126	CB	ALA	23	-19.698	10.905	4.464	1.00	40.28	H	C
ATOM	6127	C	ALA	23	-22.078	10.935	3.712	1.00	41.05	H	C
ATOM	6128	O	ALA	23	-22.754	10.959	4.739	1.00	43.31	H	O
ATOM	6129	N	ALA	24	-22.455	10.292	2.613	1.00	41.38	H	N
ATOM	6130	CA	ALA	24	-23.727	9.581	2.558	1.00	42.11	H	C
ATOM	6131	CB	ALA	24	-24.483	9.956	1.282	1.00	40.56	H	C
ATOM	6132	C	ALA	24	-23.512	8.074	2.611	1.00	42.05	H	C
ATOM	6133	O	ALA	24	-22.507	7.557	2.119	1.00	42.39	H	O
ATOM	6134	N	SER	25	-24.461	7.367	3.207	1.00	40.96	H	N
ATOM	6135	CA	SER	25	-24.384	5.917	3.243	1.00	40.89	H	C
ATOM	6136	CB	SER	25	-23.532	5.462	4.430	1.00	41.08	H	C
ATOM	6137	OG	SER	25	-24.120	5.876	5.651	1.00	44.95	H	O
ATOM	6138	C	SER	25	-25.779	5.347	3.367	1.00	39.60	H	C
ATOM	6139	O	SER	25	-26.697	6.034	3.815	1.00	38.57	H	O
ATOM	6140	N	GLY	26	-25.935	4.089	2.966	1.00	39.26	H	N
ATOM	6141	CA	GLY	26	-27.200	3.406	3.153	1.00	39.31	H	C
ATOM	6142	C	GLY	26	-28.198	3.613	2.031	1.00	40.96	H	C
ATOM	6143	O	GLY	26	-29.320	3.112	2.103	1.00	43.15	H	O
ATOM	6144	N	PHE	27	-27.811	4.348	0.994	1.00	39.72	H	N
ATOM	6145	CA	PHE	27	-28.725	4.576	-0.117	1.00	39.40	H	C
ATOM	6146	CB	PHE	27	-29.741	5.681	0.240	1.00	39.12	H	C
ATOM	6147	CG	PHE	27	-29.157	7.073	0.282	1.00	37.43	H	C
ATOM	6148	CD1	PHE	27	-28.398	7.494	1.369	1.00	34.06	H	C
ATOM	6149	CD2	PHE	27	-29.386	7.967	-0.760	1.00	34.48	H	C
ATOM	6150	CE1	PHE	27	-27.878	8.781	1.421	1.00	33.04	H	C
ATOM	6151	CE2	PHE	27	-28.867	9.262	-0.716	1.00	34.47	H	C
ATOM	6152	CZ	PHE	27	-28.113	9.669	0.376	1.00	34.29	H	C
ATOM	6153	C	PHE	27	-28.014	4.913	-1.422	1.00	38.19	H	C
ATOM	6154	O	PHE	27	-26.808	5.149	-1.449	1.00	38.12	H	O

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ATOM   6155  N   THR   28     -28.779   4.926  -2.506  1.00 38.67      H    N
ATOM   6156  CA  THR   28     -28.236   5.123  -3.842  1.00 37.98      H    C
ATOM   6157  CB  THR   28     -29.221   4.577  -4.889  1.00 39.03      H    C
ATOM   6158  OG1 THR   28     -29.545   3.222  -4.557  1.00 43.37      H    O
ATOM   6159  CG2 THR   28     -28.613   4.603  -6.272  1.00 39.31      H    C
ATOM   6160  C   THR   28     -27.976   6.609  -4.094  1.00 37.20      H    C
ATOM   6161  O   THR   28     -28.784   7.301  -4.715  1.00 37.60      H    O
ATOM   6162  N   PHE   29     -26.829   7.077  -3.613  1.00 35.10      H    N
ATOM   6163  CA  PHE   29     -26.473   8.491  -3.618  1.00 34.39      H    C
ATOM   6164  CB  PHE   29     -25.055   8.640  -3.060  1.00 32.43      H    C
ATOM   6165  CG  PHE   29     -24.583  10.061  -2.929  1.00 31.23      H    C
ATOM   6166  CD1 PHE   29     -25.109  10.898  -1.956  1.00 31.44      H    C
ATOM   6167  CD2 PHE   29     -23.562  10.541  -3.739  1.00 31.88      H    C
ATOM   6168  CE1 PHE   29     -24.623  12.191  -1.784  1.00 30.12      H    C
ATOM   6169  CE2 PHE   29     -23.070  11.828  -3.577  1.00 30.39      H    C
ATOM   6170  CZ  PHE   29     -23.603  12.656  -2.594  1.00 32.44      H    C
ATOM   6171  C   PHE   29     -26.566   9.143  -5.001  1.00 35.36      H    C
ATOM   6172  O   PHE   29     -26.948  10.305  -5.121  1.00 37.04      H    O
ATOM   6173  N   SER   30     -26.226   8.397  -6.044  1.00 35.18      H    N
ATOM   6174  CA  SER   30     -26.089   8.978  -7.373  1.00 36.29      H    C
ATOM   6175  CB  SER   30     -25.270   8.046  -8.271  1.00 36.47      H    C
ATOM   6176  OG  SER   30     -23.971   7.861  -7.726  1.00 41.17      H    O
ATOM   6177  C   SER   30     -27.425   9.297  -8.041  1.00 35.64      H    C
ATOM   6178  O   SER   30     -27.453   9.892  -9.116  1.00 33.90      H    O
ATOM   6179  N   SER   31     -28.529   8.909  -7.405  1.00 34.26      H    N
ATOM   6180  CA  SER   31     -29.853   9.258  -7.912  1.00 32.93      H    C
ATOM   6181  CB  SER   31     -30.753   8.024  -7.953  1.00 32.80      H    C
ATOM   6182  OG  SER   31     -30.280   7.090  -8.908  1.00 35.66      H    O
ATOM   6183  C   SER   31     -30.522  10.351  -7.087  1.00 32.29      H    C
ATOM   6184  O   SER   31     -31.670  10.719  -7.342  1.00 31.47      H    O
ATOM   6185  N   TYR   32     -29.805  10.875  -6.099  1.00 30.85      H    N
ATOM   6186  CA  TYR   32     -30.367  11.926  -5.261  1.00 29.83      H    C
ATOM   6187  CB  TYR   32     -30.301  11.528  -3.783  1.00 28.34      H    C
ATOM   6188  CG  TYR   32     -31.397  10.571  -3.380  1.00 28.23      H    C
ATOM   6189  CD1 TYR   32     -31.313   9.215  -3.680  1.00 28.84      H    C
ATOM   6190  CE1 TYR   32     -32.340   8.338  -3.340  1.00 28.61      H    C
ATOM   6191  CD2 TYR   32     -32.533  11.028  -2.727  1.00 27.49      H    C
ATOM   6192  CE2 TYR   32     -33.555  10.168  -2.383  1.00 27.94      H    C
ATOM   6193  CZ  TYR   32     -33.458   8.826  -2.690  1.00 30.33      H    C
ATOM   6194  OH  TYR   32     -34.487   7.976  -2.339  1.00 32.86      H    O
ATOM   6195  C   TYR   32     -29.676  13.259  -5.465  1.00 30.11      H    C
ATOM   6196  O   TYR   32     -28.450  13.326  -5.575  1.00 30.60      H    O
ATOM   6197  N   SER   33     -30.475  14.319  -5.529  1.00 28.01      H    N
ATOM   6198  CA  SER   33     -29.953  15.673  -5.405  1.00 28.98      H    C
ATOM   6199  CB  SER   33     -31.006  16.688  -5.854  1.00 28.82      H    C
ATOM   6200  OG  SER   33     -31.407  16.426  -7.194  1.00 32.46      H    O
ATOM   6201  C   SER   33     -29.604  15.902  -3.940  1.00 29.47      H    C
ATOM   6202  O   SER   33     -30.146  15.227  -3.058  1.00 28.61      H    O
ATOM   6203  N   MET   34     -28.702  16.849  -3.687  1.00 29.06      H    N
ATOM   6204  CA  MET   34     -28.261  17.168  -2.332  1.00 29.90      H    C
ATOM   6205  CB  MET   34     -26.813  16.705  -2.138  1.00 29.95      H    C
ATOM   6206  CG  MET   34     -26.657  15.197  -2.193  1.00 31.01      H    C
ATOM   6207  SD  MET   34     -27.587  14.381  -0.852  1.00 34.80      H    S
ATOM   6208  CE  MET   34     -26.780  15.106   0.605  1.00 32.82      H    C
ATOM   6209  C   MET   34     -28.379  18.665  -2.061  1.00 29.84      H    C
ATOM   6210  O   MET   34     -28.388  19.474  -2.994  1.00 29.89      H    O
ATOM   6211  N   ASN   35     -28.479  19.030  -0.786  1.00 26.73      H    N
ATOM   6212  CA  ASN   35     -28.740  20.414  -0.411  1.00 27.72      H    C
ATOM   6213  CB  ASN   35     -30.239  20.625  -0.169  1.00 27.88      H    C
ATOM   6214  CG  ASN   35     -31.098  20.079  -1.298  1.00 31.61      H    C
ATOM   6215  OD1 ASN   35     -31.478  20.814  -2.204  1.00 31.06      H    O
ATOM   6216  ND2 ASN   35     -31.410  18.784  -1.244  1.00 27.46      H    N
ATOM   6217  C   ASN   35     -27.985  20.793   0.863  1.00 29.07      H    C
ATOM   6218  O   ASN   35     -27.755  19.951   1.729  1.00 28.59      H    O
ATOM   6219  N   TRP   36     -27.610  22.064   0.967  1.00 27.79      H    N
ATOM   6220  CA  TRP   36     -27.153  22.623   2.224  1.00 26.46      H    C
ATOM   6221  CB  TRP   36     -25.815  23.351   2.044  1.00 26.13      H    C
ATOM   6222  CG  TRP   36     -24.650  22.430   1.747  1.00 30.50      H    C
ATOM   6223  CD2 TRP   36     -23.918  21.632   2.693  1.00 29.81      H    C
ATOM   6224  CE2 TRP   36     -22.939  20.919   1.969  1.00 29.00      H    C
ATOM   6225  CE3 TRP   36     -23.997  21.455   4.080  1.00 29.79      H    C
ATOM   6226  CD1 TRP   36     -24.093  22.176   0.525  1.00 29.38      H    C
ATOM   6227  NE1 TRP   36     -23.065  21.269   0.651  1.00 31.64      H    N
ATOM   6228  CZ2 TRP   36     -22.046  20.040   2.584  1.00 31.48      H    C
ATOM   6229  CZ3 TRP   36     -23.110  20.581   4.692  1.00 29.03      H    C
ATOM   6230  CH2 TRP   36     -22.148  19.884   3.944  1.00 30.42      H    C
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ATOM   6231  C   TRP   36     -28.209  23.599   2.739  1.00 28.02      H    C
ATOM   6232  O   TRP   36     -28.731  24.440   1.990  1.00 26.76      H    O
ATOM   6233  N   VAL   37     -28.517  23.467   4.025  1.00 26.57      H    N
ATOM   6234  CA  VAL   37     -29.437  24.355   4.719  1.00 26.25      H    C
ATOM   6235  CB  VAL   37     -30.750  23.618   5.054  1.00 25.90      H    C
ATOM   6236  CG1 VAL   37     -31.734  24.565   5.733  1.00 21.86      H    C
ATOM   6237  CG2 VAL   37     -31.343  23.019   3.779  1.00 23.23      H    C
ATOM   6238  C   VAL   37     -28.759  24.761   6.023  1.00 28.43      H    C
ATOM   6239  O   VAL   37     -28.183  23.921   6.715  1.00 29.50      H    O
ATOM   6240  N   ARG   38     -28.828  26.039   6.368  1.00 27.29      H    N
ATOM   6241  CA  ARG   38     -28.145  26.503   7.559  1.00 27.16      H    C
ATOM   6242  CB  ARG   38     -27.031  27.481   7.177  1.00 25.84      H    C
ATOM   6243  CG  ARG   38     -27.488  28.872   6.834  1.00 25.35      H    C
ATOM   6244  CD  ARG   38     -26.289  29.696   6.406  1.00 28.59      H    C
ATOM   6245  NE  ARG   38     -26.672  31.009   5.904  1.00 29.47      H    N
ATOM   6246  CZ  ARG   38     -25.815  31.881   5.381  1.00 29.76      H    C
ATOM   6247  NH1 ARG   38     -24.526  31.577   5.291  1.00 29.29      H    N
ATOM   6248  NH2 ARG   38     -26.247  33.058   4.956  1.00 29.33      H    N
ATOM   6249  C   ARG   38     -29.105  27.149   8.545  1.00 28.31      H    C
ATOM   6250  O   ARG   38     -30.212  27.549   8.177  1.00 27.74      H    O
ATOM   6251  N   GLN   39     -28.681  27.234   9.802  1.00 27.51      H    N
ATOM   6252  CA  GLN   39     -29.518  27.796  10.857  1.00 28.91      H    C
ATOM   6253  CB  GLN   39     -30.293  26.674  11.560  1.00 26.80      H    C
ATOM   6254  CG  GLN   39     -31.269  27.149  12.628  1.00 28.63      H    C
ATOM   6255  CD  GLN   39     -32.223  26.054  13.076  1.00 28.81      H    C
ATOM   6256  OE1 GLN   39     -31.833  24.898  13.240  1.00 30.27      H    O
ATOM   6257  NE2 GLN   39     -33.481  26.415  13.274  1.00 28.47      H    N
ATOM   6258  C   GLN   39     -28.644  28.541  11.866  1.00 31.02      H    C
ATOM   6259  O   GLN   39     -27.842  27.932  12.586  1.00 29.71      H    O
ATOM   6260  N   ALA   40     -28.787  29.860  11.900  1.00 33.52      H    N
ATOM   6261  CA  ALA   40     -28.090  30.675  12.886  1.00 37.63      H    C
ATOM   6262  CB  ALA   40     -28.247  32.156  12.547  1.00 37.07      H    C
ATOM   6263  C   ALA   40     -28.708  30.371  14.247  1.00 40.34      H    C
ATOM   6264  O   ALA   40     -29.901  30.098  14.347  1.00 39.58      H    O
ATOM   6265  N   PRO   41     -27.899  30.402  15.315  1.00 44.34      H    N
ATOM   6266  CD  PRO   41     -26.477  30.793  15.353  1.00 44.86      H    C
ATOM   6267  CA  PRO   41     -28.399  29.989  16.638  1.00 43.86      H    C
ATOM   6268  CB  PRO   41     -27.229  30.292  17.572  1.00 45.74      H    C
ATOM   6269  CG  PRO   41     -26.010  30.221  16.665  1.00 47.13      H    C
ATOM   6270  C   PRO   41     -29.668  30.743  17.032  1.00 43.16      H    C
ATOM   6271  O   PRO   41     -29.700  31.973  16.995  1.00 43.04      H    O
ATOM   6272  N   GLY   42     -30.715  29.997  17.383  1.00 42.32      H    N
ATOM   6273  CA  GLY   42     -31.990  30.609  17.720  1.00 40.30      H    C
ATOM   6274  C   GLY   42     -32.770  31.198  16.550  1.00 40.88      H    C
ATOM   6275  O   GLY   42     -33.703  31.977  16.753  1.00 39.91      H    O
ATOM   6276  N   LYS   43     -32.399  30.839  15.324  1.00 40.15      H    N
ATOM   6277  CA  LYS   43     -33.050  31.402  14.135  1.00 39.69      H    C
ATOM   6278  CB  LYS   43     -32.034  32.183  13.297  1.00 44.93      H    C
ATOM   6279  CG  LYS   43     -31.342  33.322  14.031  1.00 49.72      H    C
ATOM   6280  CD  LYS   43     -32.297  34.476  14.299  1.00 55.35      H    C
ATOM   6281  CE  LYS   43     -31.548  35.700  14.832  1.00 59.19      H    C
ATOM   6282  NZ  LYS   43     -30.434  36.120  13.913  1.00 61.48      H    N
ATOM   6283  C   LYS   43     -33.704  30.327  13.258  1.00 36.98      H    C
ATOM   6284  O   LYS   43     -33.728  29.148  13.611  1.00 34.51      H    O
ATOM   6285  N   GLY   44     -34.233  30.748  12.110  1.00 36.40      H    N
ATOM   6286  CA  GLY   44     -34.940  29.831  11.230  1.00 31.67      H    C
ATOM   6287  C   GLY   44     -34.039  29.115  10.240  1.00 30.70      H    C
ATOM   6288  O   GLY   44     -32.887  29.496  10.049  1.00 31.21      H    O
ATOM   6289  N   LEU   45     -34.562  28.069   9.609  1.00 29.44      H    N
ATOM   6290  CA  LEU   45     -33.834  27.377   8.553  1.00 28.81      H    C
ATOM   6291  CB  LEU   45     -34.583  26.103   8.142  1.00 27.99      H    C
ATOM   6292  CG  LEU   45     -34.801  25.086   9.266  1.00 27.14      H    C
ATOM   6293  CD1 LEU   45     -35.685  23.956   8.765  1.00 26.36      H    C
ATOM   6294  CD2 LEU   45     -33.454  24.551   9.750  1.00 24.68      H    C
ATOM   6295  C   LEU   45     -33.674  28.302   7.348  1.00 28.72      H    C
ATOM   6296  O   LEU   45     -34.572  29.085   7.033  1.00 27.69      H    O
ATOM   6297  N   GLU   46     -32.520  28.219   6.690  1.00 28.43      H    N
ATOM   6298  CA  GLU   46     -32.259  29.005   5.489  1.00 28.83      H    C
ATOM   6299  CB  GLU   46     -31.341  30.193   5.798  1.00 31.44      H    C
ATOM   6300  CG  GLU   46     -31.043  31.069   4.571  1.00 39.18      H    C
ATOM   6301  CD  GLU   46     -30.004  32.169   4.826  1.00 43.02      H    C
ATOM   6302  OE1 GLU   46     -30.027  33.182   4.094  1.00 45.99      H    O
ATOM   6303  OE2 GLU   46     -29.163  32.028   5.743  1.00 43.91      H    O
ATOM   6304  C   GLU   46     -31.597  28.124   4.438  1.00 28.50      H    C
ATOM   6305  O   GLU   46     -30.513  27.586   4.664  1.00 28.35      H    O
ATOM   6306  N   TRP   47     -32.256  27.974   3.291  1.00 26.22      H    N
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ATOM   6307  CA  TRP    47     -31.680  27.234   2.174  1.00 23.96      H    C
ATOM   6308  CB  TRP    47     -32.691  27.135   1.020  1.00 25.33      H    C
ATOM   6309  CG  TRP    47     -32.073  26.630  -0.243  1.00 25.29      H    C
ATOM   6310  CD2 TRP    47     -31.798  27.387  -1.431  1.00 24.26      H    C
ATOM   6311  CE2 TRP    47     -31.161  26.517  -2.342  1.00 24.29      H    C
ATOM   6312  CE3 TRP    47     -32.029  28.713  -1.812  1.00 25.96      H    C
ATOM   6313  CD1 TRP    47     -31.608  25.363  -0.478  1.00 24.30      H    C
ATOM   6314  NE1 TRP    47     -31.058  25.292  -1.737  1.00 26.54      H    N
ATOM   6315  CZ2 TRP    47     -30.751  26.931  -3.610  1.00 23.53      H    C
ATOM   6316  CZ3 TRP    47     -31.623  29.124  -3.073  1.00 25.72      H    C
ATOM   6317  CH2 TRP    47     -30.990  28.234  -3.956  1.00 24.04      H    C
ATOM   6318  C   TRP    47     -30.429  27.949   1.684  1.00 23.89      H    C
ATOM   6319  O   TRP    47     -30.433  29.167   1.520  1.00 23.38      H    O
ATOM   6320  N   VAL    48     -29.370  27.186   1.439  1.00 24.56      H    N
ATOM   6321  CA  VAL    48     -28.082  27.748   1.032  1.00 27.13      H    C
ATOM   6322  CB  VAL    48     -26.929  27.214   1.940  1.00 26.57      H    C
ATOM   6323  CG1 VAL    48     -25.589  27.683   1.408  1.00 25.87      H    C
ATOM   6324  CG2 VAL    48     -27.130  27.696   3.373  1.00 25.68      H    C
ATOM   6325  C   VAL    48     -27.727  27.425  -0.424  1.00 27.12      H    C
ATOM   6326  O   VAL    48     -27.359  28.310  -1.200  1.00 28.60      H    O
ATOM   6327  N   SER    49     -27.829  26.153  -0.789  1.00 25.51      H    N
ATOM   6328  CA  SER    49     -27.422  25.723  -2.113  1.00 27.18      H    C
ATOM   6329  CB  SER    49     -25.893  25.755  -2.204  1.00 27.60      H    C
ATOM   6330  OG  SER    49     -25.445  25.455  -3.514  1.00 30.37      H    O
ATOM   6331  C   SER    49     -27.952  24.317  -2.427  1.00 28.05      H    C
ATOM   6332  O   SER    49     -28.228  23.531  -1.518  1.00 26.28      H    O
ATOM   6333  N   SER    50     -28.101  24.015  -3.716  1.00 28.27      H    N
ATOM   6334  CA  SER    50     -28.581  22.704  -4.154  1.00 28.54      H    C
ATOM   6335  CB  SER    50     -30.061  22.782  -4.550  1.00 28.85      H    C
ATOM   6336  OG  SER    50     -30.882  23.050  -3.418  1.00 32.42      H    O
ATOM   6337  C   SER    50     -27.768  22.205  -5.345  1.00 28.12      H    C
ATOM   6338  O   SER    50     -27.315  22.997  -6.169  1.00 28.29      H    O
ATOM   6339  N   ILE    51     -27.595  20.890  -5.441  1.00 26.82      H    N
ATOM   6340  CA  ILE    51     -26.921  20.303  -6.590  1.00 24.36      H    C
ATOM   6341  CB  ILE    51     -25.419  20.114  -6.302  1.00 26.43      H    C
ATOM   6342  CG2 ILE    51     -25.220  19.159  -5.109  1.00 21.83      H    C
ATOM   6343  CG1 ILE    51     -24.709  19.587  -7.552  1.00 25.90      H    C
ATOM   6344  CD1 ILE    51     -23.194  19.662  -7.452  1.00 27.92      H    C
ATOM   6345  C   ILE    51     -27.552  18.958  -6.956  1.00 26.47      H    C
ATOM   6346  O   ILE    51     -27.751  18.097  -6.096  1.00 24.86      H    O
ATOM   6347  N   SER    52     -27.869  18.783  -8.238  1.00 25.97      H    N
ATOM   6348  CA  SER    52     -28.633  17.624  -8.673  1.00 25.28      H    C
ATOM   6349  CB  SER    52     -29.308  17.912 -10.019  1.00 24.40      H    C
ATOM   6350  OG  SER    52     -28.348  18.107 -11.046  1.00 27.24      H    O
ATOM   6351  C   SER    52     -27.713  16.412  -8.782  1.00 26.88      H    C
ATOM   6352  O   SER    52     -26.494  16.536  -8.650  1.00 28.49      H    O
ATOM   6353  N   SER    53     -28.292  15.240  -9.017  1.00 25.41      H    N
ATOM   6354  CA  SER    53     -27.523  14.007  -8.983  1.00 28.14      H    C
ATOM   6355  CB  SER    53     -28.433  12.811  -9.267  1.00 27.87      H    C
ATOM   6356  OG  SER    53     -29.011  12.911 -10.555  1.00 30.31      H    O
ATOM   6357  C   SER    53     -26.344  14.000  -9.959  1.00 30.57      H    C
ATOM   6358  O   SER    53     -25.284  13.447  -9.645  1.00 32.17      H    O
ATOM   6359  N   SER    54     -26.517  14.606 -11.135  1.00 28.22      H    N
ATOM   6360  CA  SER    54     -25.437  14.649 -12.123  1.00 28.16      H    C
ATOM   6361  CB  SER    54     -25.966  14.259 -13.520  1.00 27.82      H    C
ATOM   6362  OG  SER    54     -26.898  15.215 -14.023  1.00 29.46      H    O
ATOM   6363  C   SER    54     -24.766  16.027 -12.185  1.00 27.90      H    C
ATOM   6364  O   SER    54     -23.979  16.302 -13.087  1.00 28.59      H    O
ATOM   6365  N   SER    55     -25.087  16.882 -11.220  1.00 28.14      H    N
ATOM   6366  CA  SER    55     -24.520  18.230 -11.124  1.00 30.31      H    C
ATOM   6367  CB  SER    55     -22.987  18.166 -11.092  1.00 31.88      H    C
ATOM   6368  OG  SER    55     -22.526  17.349 -10.023  1.00 34.17      H    O
ATOM   6369  C   SER    55     -24.968  19.180 -12.244  1.00 30.07      H    C
ATOM   6370  O   SER    55     -24.353  20.230 -12.457  1.00 29.82      H    O
ATOM   6371  N   SER    56     -26.039  18.828 -12.950  1.00 27.46      H    N
ATOM   6372  CA  SER    56     -26.501  19.654 -14.066  1.00 27.70      H    C
ATOM   6373  CB  SER    56     -27.098  18.772 -15.174  1.00 29.06      H    C
ATOM   6374  OG  SER    56     -28.269  18.101 -14.734  1.00 34.97      H    O
ATOM   6375  C   SER    56     -27.505  20.727 -13.637  1.00 27.78      H    C
ATOM   6376  O   SER    56     -27.805  21.642 -14.406  1.00 27.41      H    O
ATOM   6377  N   TYR    57     -28.028  20.611 -12.413  1.00 27.64      H    N
ATOM   6378  CA  TYR    57     -28.685  21.738 -11.742  1.00 27.77      H    C
ATOM   6379  CB  TYR    57     -30.107  21.369 -11.294  1.00 27.25      H    C
ATOM   6380  CG  TYR    57     -31.053  20.945 -12.400  1.00 29.87      H    C
ATOM   6381  CD1 TYR    57     -31.126  19.616 -12.798  1.00 28.73      H    C
ATOM   6382  CE1 TYR    57     -32.050  19.199 -13.735  1.00 30.08      H    C
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ATOM   6383  CD2 TYR    57     -31.933  21.857 -12.984  1.00 28.13      H    C
ATOM   6384  CE2 TYR    57     -32.861  21.448 -13.929  1.00 29.41      H    C
ATOM   6385  CZ  TYR    57     -32.917  20.113 -14.294  1.00 30.49      H    C
ATOM   6386  OH  TYR    57     -33.861  19.669 -15.193  1.00 29.95      H    O
ATOM   6387  C   TYR    57     -27.881  22.156 -10.504  1.00 29.02      H    C
ATOM   6388  O   TYR    57     -27.628  21.344  -9.598  1.00 29.53      H    O
ATOM   6389  N   ILE    58     -27.487  23.424 -10.469  1.00 29.50      H    N
ATOM   6390  CA  ILE    58     -26.789  24.003  -9.325  1.00 29.52      H    C
ATOM   6391  CB  ILE    58     -25.270  24.148  -9.614  1.00 30.72      H    C
ATOM   6392  CG2 ILE    58     -24.589  24.915  -8.498  1.00 29.96      H    C
ATOM   6393  CG1 ILE    58     -24.627  22.765  -9.740  1.00 30.72      H    C
ATOM   6394  CD1 ILE    58     -23.154  22.795 -10.092  1.00 28.84      H    C
ATOM   6395  C   ILE    58     -27.392  25.380  -9.067  1.00 29.74      H    C
ATOM   6396  O   ILE    58     -27.609  26.145 -10.003  1.00 30.44      H    O
ATOM   6397  N   SER    59     -27.697  25.685  -7.809  1.00 27.57      H    N
ATOM   6398  CA  SER    59     -28.161  27.021  -7.458  1.00 29.06      H    C
ATOM   6399  CB  SER    59     -29.680  27.113  -7.616  1.00 28.15      H    C
ATOM   6400  OG  SER    59     -30.321  26.100  -6.874  1.00 34.72      H    O
ATOM   6401  C   SER    59     -27.758  27.454  -6.044  1.00 28.73      H    C
ATOM   6402  O   SER    59     -27.358  26.634  -5.213  1.00 29.00      H    O
ATOM   6403  N   TYR    60     -27.874  28.754  -5.791  1.00 27.30      H    N
ATOM   6404  CA  TYR    60     -27.374  29.366  -4.571  1.00 27.26      H    C
ATOM   6405  CB  TYR    60     -26.039  30.073  -4.834  1.00 25.88      H    C
ATOM   6406  CG  TYR    60     -24.917  29.156  -5.258  1.00 25.19      H    C
ATOM   6407  CD1 TYR    60     -24.210  28.421  -4.315  1.00 23.78      H    C
ATOM   6408  CE1 TYR    60     -23.190  27.572  -4.687  1.00 22.85      H    C
ATOM   6409  CD2 TYR    60     -24.567  29.018  -6.603  1.00 23.48      H    C
ATOM   6410  CE2 TYR    60     -23.543  28.171  -6.988  1.00 21.69      H    C
ATOM   6411  CZ  TYR    60     -22.859  27.447  -6.021  1.00 23.85      H    C
ATOM   6412  OH  TYR    60     -21.854  26.575  -6.377  1.00 24.72      H    O
ATOM   6413  C   TYR    60     -28.379  30.397  -4.087  1.00 28.79      H    C
ATOM   6414  O   TYR    60     -29.032  31.059  -4.894  1.00 27.21      H    O
ATOM   6415  N   ALA    61     -28.499  30.528  -2.770  1.00 28.73      H    N
ATOM   6416  CA  ALA    61     -29.203  31.657  -2.180  1.00 30.11      H    C
ATOM   6417  CB  ALA    61     -29.264  31.491  -0.658  1.00 28.64      H    C
ATOM   6418  C   ALA    61     -28.426  32.926  -2.544  1.00 31.88      H    C
ATOM   6419  O   ALA    61     -27.210  32.883  -2.702  1.00 29.32      H    O
ATOM   6420  N   ASP    62     -29.127  34.046  -2.683  1.00 35.01      H    N
ATOM   6421  CA  ASP    62     -28.475  35.314  -2.995  1.00 40.62      H    C
ATOM   6422  CB  ASP    62     -29.500  36.444  -2.997  1.00 47.18      H    C
ATOM   6423  CG  ASP    62     -29.915  36.842  -4.390  1.00 55.90      H    C
ATOM   6424  OD1 ASP    62     -31.131  36.750  -4.693  1.00 59.73      H    O
ATOM   6425  OD2 ASP    62     -29.023  37.246  -5.177  1.00 57.97      H    O
ATOM   6426  C   ASP    62     -27.366  35.666  -2.007  1.00 41.05      H    C
ATOM   6427  O   ASP    62     -26.320  36.181  -2.394  1.00 41.21      H    O
ATOM   6428  N   SER    63     -27.606  35.387  -0.731  1.00 40.70      H    N
ATOM   6429  CA  SER    63     -26.704  35.804   0.337  1.00 41.03      H    C
ATOM   6430  CB  SER    63     -27.354  35.546   1.695  1.00 41.93      H    C
ATOM   6431  OG  SER    63     -27.781  34.199   1.795  1.00 42.20      H    O
ATOM   6432  C   SER    63     -25.333  35.131   0.302  1.00 40.04      H    C
ATOM   6433  O   SER    63     -24.396  35.606   0.943  1.00 42.70      H    O
ATOM   6434  N   VAL    64     -25.206  34.033  -0.434  1.00 37.58      H    N
ATOM   6435  CA  VAL    64     -23.923  33.342  -0.516  1.00 35.50      H    C
ATOM   6436  CB  VAL    64     -24.023  31.883  -0.010  1.00 34.20      H    C
ATOM   6437  CG1 VAL    64     -24.635  31.851   1.399  1.00 32.45      H    C
ATOM   6438  CG2 VAL    64     -24.844  31.054  -0.987  1.00 32.80      H    C
ATOM   6439  C   VAL    64     -23.386  33.309  -1.941  1.00 36.79      H    C
ATOM   6440  O   VAL    64     -22.329  32.726  -2.203  1.00 35.31      H    O
ATOM   6441  N   LYS    65     -24.117  33.925  -2.862  1.00 37.48      H    N
ATOM   6442  CA  LYS    65     -23.742  33.884  -4.272  1.00 42.50      H    C
ATOM   6443  CB  LYS    65     -24.766  34.661  -5.106  1.00 46.64      H    C
ATOM   6444  CG  LYS    65     -24.604  34.500  -6.605  1.00 52.44      H    C
ATOM   6445  CD  LYS    65     -25.762  33.691  -7.189  1.00 57.69      H    C
ATOM   6446  CE  LYS    65     -27.105  34.302  -6.786  1.00 60.32      H    C
ATOM   6447  NZ  LYS    65     -28.261  33.402  -7.060  1.00 62.20      H    N
ATOM   6448  C   LYS    65     -22.354  34.494  -4.465  1.00 42.87      H    C
ATOM   6449  O   LYS    65     -22.077  35.593  -3.978  1.00 43.54      H    O
ATOM   6450  N   GLY    66     -21.484  33.780  -5.171  1.00 42.33      H    N
ATOM   6451  CA  GLY    66     -20.156  34.301  -5.437  1.00 42.49      H    C
ATOM   6452  C   GLY    66     -19.126  33.988  -4.361  1.00 44.27      H    C
ATOM   6453  O   GLY    66     -17.926  34.142  -4.589  1.00 44.84      H    O
ATOM   6454  N   ARG    67     -19.580  33.549  -3.189  1.00 41.56      H    N
ATOM   6455  CA  ARG    67     -18.663  33.212  -2.108  1.00 39.45      H    C
ATOM   6456  CB  ARG    67     -19.063  33.955  -0.830  1.00 40.38      H    C
ATOM   6457  CG  ARG    67     -19.033  35.478  -0.968  1.00 39.81      H    C
ATOM   6458  CD  ARG    67     -19.250  36.182   0.366  1.00 39.55      H    C
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ATOM   6459  NE  ARG    67     -20.572  35.918   0.933  1.00 39.73      H    N
ATOM   6460  CZ  ARG    67     -20.786  35.246   2.064  1.00 39.95      H    C
ATOM   6461  NH1 ARG    67     -19.760  34.763   2.760  1.00 36.21      H    N
ATOM   6462  NH2 ARG    67     -22.028  35.057   2.498  1.00 37.67      H    N
ATOM   6463  C   ARG    67     -18.616  31.710  -1.849  1.00 38.91      H    C
ATOM   6464  O   ARG    67     -17.549  31.160  -1.566  1.00 38.47      H    O
ATOM   6465  N   PHE    68     -19.769  31.046  -1.951  1.00 37.70      H    N
ATOM   6466  CA  PHE    68     -19.846  29.603  -1.714  1.00 34.66      H    C
ATOM   6467  CB  PHE    68     -21.092  29.247  -0.889  1.00 33.55      H    C
ATOM   6468  CG  PHE    68     -21.064  29.759   0.530  1.00 34.88      H    C
ATOM   6469  CD1 PHE    68     -22.001  29.316   1.453  1.00 34.07      H    C
ATOM   6470  CD2 PHE    68     -20.120  30.692   0.937  1.00 34.38      H    C
ATOM   6471  CE1 PHE    68     -22.004  29.791   2.747  1.00 33.89      H    C
ATOM   6472  CE2 PHE    68     -20.115  31.176   2.238  1.00 34.40      H    C
ATOM   6473  CZ  PHE    68     -21.058  30.725   3.143  1.00 35.06      H    C
ATOM   6474  C   PHE    68     -19.895  28.840  -3.029  1.00 34.39      H    C
ATOM   6475  O   PHE    68     -20.485  29.302  -4.006  1.00 33.33      H    O
ATOM   6476  N   THR    69     -19.275  27.666  -3.045  1.00 33.03      H    N
ATOM   6477  CA  THR    69     -19.317  26.787  -4.204  1.00 33.88      H    C
ATOM   6478  CB  THR    69     -17.954  26.710  -4.911  1.00 34.15      H    C
ATOM   6479  OG1 THR    69     -17.583  28.010  -5.384  1.00 36.58      H    O
ATOM   6480  CG2 THR    69     -18.026  25.739  -6.088  1.00 33.48      H    C
ATOM   6481  C   THR    69     -19.680  25.379  -3.757  1.00 34.59      H    C
ATOM   6482  O   THR    69     -18.985  24.786  -2.930  1.00 34.69      H    O
ATOM   6483  N   ILE    70     -20.758  24.841  -4.315  1.00 32.65      H    N
ATOM   6484  CA  ILE    70     -21.203  23.503  -3.957  1.00 31.01      H    C
ATOM   6485  CB  ILE    70     -22.754  23.432  -3.936  1.00 30.63      H    C
ATOM   6486  CG2 ILE    70     -23.308  23.592  -5.351  1.00 29.46      H    C
ATOM   6487  CG1 ILE    70     -23.219  22.111  -3.329  1.00 29.67      H    C
ATOM   6488  CD1 ILE    70     -24.719  22.090  -3.004  1.00 27.57      H    C
ATOM   6489  C   ILE    70     -20.635  22.534  -4.987  1.00 31.28      H    C
ATOM   6490  O   ILE    70     -20.373  22.914  -6.122  1.00 33.97      H    O
ATOM   6491  N   SER    71     -20.406  21.293  -4.582  1.00 31.56      H    N
ATOM   6492  CA  SER    71     -20.011  20.255  -5.522  1.00 32.33      H    C
ATOM   6493  CB  SER    71     -18.547  20.427  -5.947  1.00 33.86      H    C
ATOM   6494  OG  SER    71     -17.673  20.291  -4.839  1.00 37.91      H    O
ATOM   6495  C   SER    71     -20.195  18.902  -4.861  1.00 32.41      H    C
ATOM   6496  O   SER    71     -20.456  18.821  -3.660  1.00 31.10      H    O
ATOM   6497  N   ARG    72     -20.066  17.843  -5.648  1.00 31.25      H    N
ATOM   6498  CA  ARG    72     -20.285  16.500  -5.140  1.00 32.41      H    C
ATOM   6499  CB  ARG    72     -21.747  16.092  -5.343  1.00 30.85      H    C
ATOM   6500  CG  ARG    72     -22.194  16.055  -6.802  1.00 29.48      H    C
ATOM   6501  CD  ARG    72     -23.691  15.820  -6.912  1.00 28.57      H    C
ATOM   6502  NE  ARG    72     -24.075  14.470  -6.497  1.00 28.84      H    N
ATOM   6503  CZ  ARG    72     -25.264  14.152  -5.989  1.00 27.19      H    C
ATOM   6504  NH1 ARG    72     -26.197  15.086  -5.828  1.00 26.26      H    N
ATOM   6505  NH2 ARG    72     -25.525  12.900  -5.641  1.00 26.57      H    N
ATOM   6506  C   ARG    72     -19.368  15.530  -5.860  1.00 34.09      H    C
ATOM   6507  O   ARG    72     -18.870  15.821  -6.944  1.00 33.62      H    O
ATOM   6508  N   ASP    73     -19.136  14.379  -5.243  1.00 38.28      H    N
ATOM   6509  CA  ASP    73     -18.327  13.325  -5.849  1.00 39.48      H    C
ATOM   6510  CB  ASP    73     -16.947  13.281  -5.179  1.00 41.60      H    C
ATOM   6511  CG  ASP    73     -15.990  12.292  -5.843  1.00 44.95      H    C
ATOM   6512  OD1 ASP    73     -16.426  11.183  -6.225  1.00 45.18      H    O
ATOM   6513  OD2 ASP    73     -14.791  12.630  -5.974  1.00 46.94      H    O
ATOM   6514  C   ASP    73     -19.066  12.013  -5.624  1.00 39.78      H    C
ATOM   6515  O   ASP    73     -18.978  11.423  -4.545  1.00 40.60      H    O
ATOM   6516  N   ASN    74     -19.797  11.560  -6.639  1.00 38.88      H    N
ATOM   6517  CA  ASN    74     -20.653  10.388  -6.486  1.00 39.67      H    C
ATOM   6518  CB  ASN    74     -21.523  10.195  -7.732  1.00 37.88      H    C
ATOM   6519  CG  ASN    74     -22.648  11.215  -7.821  1.00 38.36      H    C
ATOM   6520  OD1 ASN    74     -22.954  11.915  -6.848  1.00 38.42      H    O
ATOM   6521  ND2 ASN    74     -23.271  11.303  -8.989  1.00 35.16      H    N
ATOM   6522  C   ASN    74     -19.865   9.115  -6.212  1.00 41.22      H    C
ATOM   6523  O   ASN    74     -20.336   8.230  -5.499  1.00 42.03      H    O
ATOM   6524  N   ALA    75     -18.667   9.017  -6.780  1.00 41.81      H    N
ATOM   6525  CA  ALA    75     -17.819   7.852  -6.554  1.00 44.00      H    C
ATOM   6526  CB  ALA    75     -16.553   7.948  -7.410  1.00 42.83      H    C
ATOM   6527  C   ALA    75     -17.450   7.748  -5.074  1.00 45.21      H    C
ATOM   6528  O   ALA    75     -17.252   6.654  -4.550  1.00 45.78      H    O
ATOM   6529  N   LYS    76     -17.368   8.892  -4.402  1.00 46.01      H    N
ATOM   6530  CA  LYS    76     -17.043   8.916  -2.982  1.00 47.14      H    C
ATOM   6531  CB  LYS    76     -16.034  10.029  -2.696  1.00 49.80      H    C
ATOM   6532  CG  LYS    76     -14.694   9.846  -3.389  1.00 52.73      H    C
ATOM   6533  CD  LYS    76     -13.726  10.958  -3.012  1.00 56.34      H    C
ATOM   6534  CE  LYS    76     -12.383  10.797  -3.724  1.00 58.48      H    C
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ATOM   6535  NZ  LYS   76     -11.483  11.966  -3.476  1.00 60.20      H    N
ATOM   6536  C   LYS   76     -18.271   9.107  -2.090  1.00 47.47      H    C
ATOM   6537  O   LYS   76     -18.141   9.232  -0.875  1.00 47.19      H    O
ATOM   6538  N   ASN   77     -19.460   9.136  -2.690  1.00 46.65      H    N
ATOM   6539  CA  ASN   77     -20.689   9.376  -1.933  1.00 44.74      H    C
ATOM   6540  CB  ASN   77     -21.023   8.166  -1.052  1.00 45.89      H    C
ATOM   6541  CG  ASN   77     -21.302   6.913  -1.860  1.00 47.96      H    C
ATOM   6542  OD1 ASN   77     -22.410   6.709  -2.352  1.00 49.54      H    O
ATOM   6543  ND2 ASN   77     -20.292   6.065  -2.000  1.00 50.93      H    N
ATOM   6544  C   ASN   77     -20.545  10.617  -1.050  1.00 42.51      H    C
ATOM   6545  O   ASN   77     -20.883  10.588   0.134  1.00 42.35      H    O
ATOM   6546  N   SER   78     -20.039  11.704  -1.621  1.00 39.28      H    N
ATOM   6547  CA  SER   78     -19.787  12.898  -0.836  1.00 38.34      H    C
ATOM   6548  CB  SER   78     -18.291  13.032  -0.565  1.00 40.48      H    C
ATOM   6549  OG  SER   78     -17.830  11.912   0.169  1.00 46.08      H    O
ATOM   6550  C   SER   78     -20.310  14.186  -1.456  1.00 37.03      H    C
ATOM   6551  O   SER   78     -20.320  14.350  -2.678  1.00 37.05      H    O
ATOM   6552  N   LEU   79     -20.733  15.093  -0.580  1.00 33.76      H    N
ATOM   6553  CA  LEU   79     -21.212  16.417  -0.945  1.00 33.07      H    C
ATOM   6554  CB  LEU   79     -22.642  16.599  -0.412  1.00 30.60      H    C
ATOM   6555  CG  LEU   79     -23.219  18.015  -0.350  1.00 29.82      H    C
ATOM   6556  CD1 LEU   79     -23.487  18.523  -1.763  1.00 28.74      H    C
ATOM   6557  CD2 LEU   79     -24.504  18.008   0.470  1.00 26.94      H    C
ATOM   6558  C   LEU   79     -20.263  17.436  -0.294  1.00 33.73      H    C
ATOM   6559  O   LEU   79     -19.834  17.237   0.844  1.00 35.43      H    O
ATOM   6560  N   TYR   80     -19.931  18.512  -1.003  1.00 31.34      H    N
ATOM   6561  CA  TYR   80     -19.001  19.507  -0.479  1.00 30.56      H    C
ATOM   6562  CB  TYR   80     -17.698  19.500  -1.274  1.00 32.57      H    C
ATOM   6563  CG  TYR   80     -17.067  18.136  -1.386  1.00 35.32      H    C
ATOM   6564  CD1 TYR   80     -17.045  17.465  -2.599  1.00 36.45      H    C
ATOM   6565  CE1 TYR   80     -16.486  16.208  -2.711  1.00 38.72      H    C
ATOM   6566  CD2 TYR   80     -16.507  17.510  -0.275  1.00 36.23      H    C
ATOM   6567  CE2 TYR   80     -15.945  16.250  -0.374  1.00 37.75      H    C
ATOM   6568  CZ  TYR   80     -15.938  15.604  -1.598  1.00 40.42      H    C
ATOM   6569  OH  TYR   80     -15.387  14.349  -1.721  1.00 42.98      H    O
ATOM   6570  C   TYR   80     -19.574  20.909  -0.508  1.00 31.38      H    C
ATOM   6571  O   TYR   80     -20.414  21.226  -1.336  1.00 31.59      H    O
ATOM   6572  N   LEU   81     -19.118  21.749   0.413  1.00 32.68      H    N
ATOM   6573  CA  LEU   81     -19.394  23.172   0.341  1.00 33.13      H    C
ATOM   6574  CB  LEU   81     -20.476  23.573   1.350  1.00 30.32      H    C
ATOM   6575  CG  LEU   81     -20.966  25.018   1.180  1.00 31.03      H    C
ATOM   6576  CD1 LEU   81     -21.629  25.162  -0.186  1.00 30.17      H    C
ATOM   6577  CD2 LEU   81     -21.955  25.387   2.279  1.00 29.51      H    C
ATOM   6578  C   LEU   81     -18.106  23.941   0.633  1.00 35.97      H    C
ATOM   6579  O   LEU   81     -17.618  23.955   1.770  1.00 35.94      H    O
ATOM   6580  N   GLN   82     -17.558  24.571  -0.400  1.00 35.80      H    N
ATOM   6581  CA  GLN   82     -16.424  25.463  -0.235  1.00 37.59      H    C
ATOM   6582  CB  GLN   82     -15.592  25.501  -1.521  1.00 38.62      H    C
ATOM   6583  CG  GLN   82     -14.362  26.406  -1.448  1.00 42.10      H    C
ATOM   6584  CD  GLN   82     -13.374  25.975  -0.368  1.00 43.68      H    C
ATOM   6585  OE1 GLN   82     -12.986  24.805  -0.292  1.00 43.76      H    O
ATOM   6586  NE2 GLN   82     -12.968  26.922   0.473  1.00 43.92      H    N
ATOM   6587  C   GLN   82     -16.940  26.854   0.099  1.00 38.25      H    C
ATOM   6588  O   GLN   82     -17.640  27.472  -0.698  1.00 39.65      H    O
ATOM   6589  N   MET   83     -16.600  27.341   1.289  1.00 40.33      H    N
ATOM   6590  CA  MET   83     -17.043  28.657   1.733  1.00 42.26      H    C
ATOM   6591  CB  MET   83     -17.682  28.557   3.120  1.00 42.53      H    C
ATOM   6592  CG  MET   83     -18.815  27.538   3.240  1.00 46.08      H    C
ATOM   6593  SD  MET   83     -19.506  27.440   4.929  1.00 49.67      H    S
ATOM   6594  CE  MET   83     -18.162  26.710   5.786  1.00 50.01      H    C
ATOM   6595  C   MET   83     -15.868  29.634   1.785  1.00 43.58      H    C
ATOM   6596  O   MET   83     -14.917  29.441   2.545  1.00 45.85      H    O
ATOM   6597  N   ASN   84     -15.942  30.686   0.979  1.00 42.66      H    N
ATOM   6598  CA  ASN   84     -14.899  31.699   0.945  1.00 42.04      H    C
ATOM   6599  CB  ASN   84     -14.353  31.857  -0.472  1.00 42.61      H    C
ATOM   6600  CG  ASN   84     -13.545  30.664  -0.917  1.00 45.11      H    C
ATOM   6601  OD1 ASN   84     -13.083  29.866  -0.098  1.00 46.92      H    O
ATOM   6602  ND2 ASN   84     -13.368  30.529  -2.224  1.00 47.46      H    N
ATOM   6603  C   ASN   84     -15.443  33.032   1.416  1.00 42.87      H    C
ATOM   6604  O   ASN   84     -16.657  33.229   1.478  1.00 41.82      H    O
ATOM   6605  N   SER   85     -14.532  33.941   1.752  1.00 42.16      H    N
ATOM   6606  CA  SER   85     -14.898  35.288   2.153  1.00 41.46      H    C
ATOM   6607  CB  SER   85     -15.383  36.077   0.938  1.00 43.66      H    C
ATOM   6608  OG  SER   85     -14.432  36.002  -0.110  1.00 47.73      H    O
ATOM   6609  C   SER   85     -15.981  35.268   3.217  1.00 40.30      H    C
ATOM   6610  O   SER   85     -16.959  36.020   3.135  1.00 39.19      H    O
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ATOM   6611  N   LEU   86     -15.798  34.409   4.217  1.00 39.13      H    N
ATOM   6612  CA  LEU   86     -16.785  34.255   5.281  1.00 39.06      H    C
ATOM   6613  CB  LEU   86     -16.347  33.159   6.245  1.00 37.15      H    C
ATOM   6614  CG  LEU   86     -16.565  31.763   5.669  1.00 38.36      H    C
ATOM   6615  CD1 LEU   86     -15.834  30.724   6.492  1.00 37.27      H    C
ATOM   6616  CD2 LEU   86     -18.054  31.485   5.628  1.00 37.79      H    C
ATOM   6617  C   LEU   86     -17.039  35.540   6.051  1.00 39.98      H    C
ATOM   6618  O   LEU   86     -16.138  36.359   6.235  1.00 41.95      H    O
ATOM   6619  N   ARG   87     -18.280  35.714   6.489  1.00 40.79      H    N
ATOM   6620  CA  ARG   87     -18.662  36.863   7.296  1.00 43.46      H    C
ATOM   6621  CB  ARG   87     -19.635  37.754   6.532  1.00 45.67      H    C
ATOM   6622  CG  ARG   87     -19.140  38.192   5.182  1.00 49.88      H    C
ATOM   6623  CD  ARG   87     -20.293  38.703   4.351  1.00 53.41      H    C
ATOM   6624  NE  ARG   87     -19.920  38.894   2.955  1.00 57.94      H    N
ATOM   6625  CZ  ARG   87     -20.781  39.233   2.001  1.00 59.50      H    C
ATOM   6626  NH1 ARG   87     -20.366  39.389   0.750  1.00 59.64      H    N
ATOM   6627  NH2 ARG   87     -22.062  39.410   2.303  1.00 58.79      H    N
ATOM   6628  C   ARG   87     -19.329  36.387   8.577  1.00 43.92      H    C
ATOM   6629  O   ARG   87     -19.737  35.227   8.681  1.00 42.74      H    O
ATOM   6630  N   ALA   88     -19.444  37.291   9.544  1.00 44.62      H    N
ATOM   6631  CA  ALA   88     -20.030  36.960  10.838  1.00 45.48      H    C
ATOM   6632  CB  ALA   88     -20.133  38.222  11.699  1.00 44.63      H    C
ATOM   6633  C   ALA   88     -21.413  36.335  10.649  1.00 44.68      H    C
ATOM   6634  O   ALA   88     -21.762  35.364  11.320  1.00 43.24      H    O
ATOM   6635  N   GLU   89     -22.180  36.900   9.718  1.00 45.01      H    N
ATOM   6636  CA  GLU   89     -23.546  36.460   9.441  1.00 44.88      H    C
ATOM   6637  CB  GLU   89     -24.219  37.419   8.453  1.00 49.04      H    C
ATOM   6638  CG  GLU   89     -24.223  38.878   8.894  1.00 58.20      H    C
ATOM   6639  CD  GLU   89     -22.918  39.596   8.569  1.00 62.22      H    C
ATOM   6640  OE1 GLU   89     -22.376  40.289   9.461  1.00 64.59      H    O
ATOM   6641  OE2 GLU   89     -22.441  39.466   7.419  1.00 64.36      H    O
ATOM   6642  C   GLU   89     -23.625  35.041   8.883  1.00 41.48      H    C
ATOM   6643  O   GLU   89     -24.703  34.461   8.822  1.00 40.85      H    O
ATOM   6644  N   ASP   90     -22.491  34.487   8.465  1.00 38.97      H    N
ATOM   6645  CA  ASP   90     -22.451  33.104   8.003  1.00 36.93      H    C
ATOM   6646  CB  ASP   90     -21.268  32.884   7.058  1.00 38.32      H    C
ATOM   6647  CG  ASP   90     -21.391  33.687   5.772  1.00 41.49      H    C
ATOM   6648  OD1 ASP   90     -22.526  33.850   5.265  1.00 41.50      H    O
ATOM   6649  OD2 ASP   90     -20.348  34.160   5.272  1.00 42.86      H    O
ATOM   6650  C   ASP   90     -22.357  32.120   9.162  1.00 36.53      H    C
ATOM   6651  O   ASP   90     -22.304  30.907   8.951  1.00 37.19      H    O
ATOM   6652  N   THR   91     -22.334  32.643  10.385  1.00 34.31      H    N
ATOM   6653  CA  THR   91     -22.252  31.797  11.572  1.00 34.08      H    C
ATOM   6654  CB  THR   91     -22.036  32.656  12.849  1.00 34.84      H    C
ATOM   6655  OG1 THR   91     -20.738  33.263  12.799  1.00 36.83      H    O
ATOM   6656  CG2 THR   91     -22.160  31.804  14.109  1.00 31.37      H    C
ATOM   6657  C   THR   91     -23.553  31.019  11.710  1.00 32.40      H    C
ATOM   6658  O   THR   91     -24.628  31.613  11.763  1.00 32.80      H    O
ATOM   6659  N   ALA   92     -23.465  29.695  11.774  1.00 29.43      H    N
ATOM   6660  CA  ALA   92     -24.674  28.884  11.827  1.00 29.39      H    C
ATOM   6661  CB  ALA   92     -25.551  29.177  10.601  1.00 31.93      H    C
ATOM   6662  C   ALA   92     -24.334  27.409  11.867  1.00 28.87      H    C
ATOM   6663  O   ALA   92     -23.197  27.025  11.599  1.00 28.15      H    O
ATOM   6664  N   VAL   93     -25.321  26.581  12.202  1.00 28.51      H    N
ATOM   6665  CA  VAL   93     -25.210  25.145  11.954  1.00 28.45      H    C
ATOM   6666  CB  VAL   93     -26.178  24.339  12.851  1.00 30.44      H    C
ATOM   6667  CG1 VAL   93     -26.090  22.866  12.503  1.00 29.75      H    C
ATOM   6668  CG2 VAL   93     -25.836  24.558  14.344  1.00 31.02      H    C
ATOM   6669  C   VAL   93     -25.562  24.877  10.485  1.00 30.00      H    C
ATOM   6670  O   VAL   93     -26.553  25.403   9.969  1.00 30.05      H    O
ATOM   6671  N   TYR   94     -24.741  24.077   9.812  1.00 29.21      H    N
ATOM   6672  CA  TYR   94     -24.997  23.711   8.424  1.00 29.79      H    C
ATOM   6673  CB  TYR   94     -23.742  23.945   7.570  1.00 29.58      H    C
ATOM   6674  CG  TYR   94     -23.442  25.410   7.332  1.00 32.16      H    C
ATOM   6675  CD1 TYR   94     -23.617  25.981   6.074  1.00 31.93      H    C
ATOM   6676  CE1 TYR   94     -23.410  27.336   5.865  1.00 30.72      H    C
ATOM   6677  CD2 TYR   94     -23.041  26.237   8.379  1.00 31.28      H    C
ATOM   6678  CE2 TYR   94     -22.831  27.592   8.182  1.00 30.20      H    C
ATOM   6679  CZ  TYR   94     -23.022  28.137   6.922  1.00 32.69      H    C
ATOM   6680  OH  TYR   94     -22.863  29.495   6.727  1.00 32.53      H    O
ATOM   6681  C   TYR   94     -25.424  22.249   8.320  1.00 29.99      H    C
ATOM   6682  O   TYR   94     -24.688  21.352   8.750  1.00 30.54      H    O
ATOM   6683  N   PHE   95     -26.610  22.019   7.754  1.00 29.58      H    N
ATOM   6684  CA  PHE   95     -27.123  20.666   7.512  1.00 29.84      H    C
ATOM   6685  CB  PHE   95     -28.601  20.557   7.905  1.00 27.29      H    C
ATOM   6686  CG  PHE   95     -28.900  20.937   9.334  1.00 30.50      H    C
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ATOM   6687  CD1 PHE    95     -28.783  20.004  10.357  1.00 30.20      H    C
ATOM   6688  CD2 PHE    95     -29.336  22.218   9.651  1.00 30.58      H    C
ATOM   6689  CE1 PHE    95     -29.098  20.343  11.671  1.00 27.42      H    C
ATOM   6690  CE2 PHE    95     -29.652  22.560  10.960  1.00 29.43      H    C
ATOM   6691  CZ  PHE    95     -29.531  21.619  11.968  1.00 27.23      H    C
ATOM   6692  C   PHE    95     -27.016  20.347   6.023  1.00 31.72      H    C
ATOM   6693  O   PHE    95     -27.203  21.240   5.185  1.00 30.65      H    O
ATOM   6694  N   CYS    96     -26.734  19.085   5.694  1.00 32.57      H    N
ATOM   6695  CA  CYS    96     -27.051  18.566   4.366  1.00 35.64      H    C
ATOM   6696  C   CYS    96     -28.344  17.753   4.388  1.00 34.02      H    C
ATOM   6697  O   CYS    96     -28.718  17.185   5.414  1.00 33.53      H    O
ATOM   6698  CB  CYS    96     -25.898  17.710   3.784  1.00 41.97      H    C
ATOM   6699  SG  CYS    96     -25.132  16.445   4.858  1.00 55.63      H    S
ATOM   6700  N   ALA    97     -29.028  17.710   3.249  1.00 30.78      H    N
ATOM   6701  CA  ALA    97     -30.273  16.962   3.134  1.00 30.15      H    C
ATOM   6702  CB  ALA    97     -31.450  17.824   3.582  1.00 28.28      H    C
ATOM   6703  C   ALA    97     -30.457  16.540   1.690  1.00 29.71      H    C
ATOM   6704  O   ALA    97     -30.050  17.252   0.768  1.00 31.75      H    O
ATOM   6705  N   ARG    98     -31.067  15.382   1.492  1.00 27.73      H    N
ATOM   6706  CA  ARG    98     -31.226  14.840   0.155  1.00 28.67      H    C
ATOM   6707  CB  ARG    98     -30.979  13.334   0.164  1.00 28.08      H    C
ATOM   6708  CG  ARG    98     -32.090  12.571   0.851  1.00 29.78      H    C
ATOM   6709  CD  ARG    98     -31.942  11.080   0.677  1.00 27.61      H    C
ATOM   6710  NE  ARG    98     -33.217  10.417   0.910  1.00 30.98      H    N
ATOM   6711  CZ  ARG    98     -33.400   9.099   0.859  1.00 31.84      H    C
ATOM   6712  NH1 ARG    98     -32.384   8.292   0.587  1.00 32.85      H    N
ATOM   6713  NH2 ARG    98     -34.605   8.593   1.064  1.00 29.18      H    N
ATOM   6714  C   ARG    98     -32.635  15.105  -0.344  1.00 28.25      H    C
ATOM   6715  O   ARG    98     -33.546  15.321   0.447  1.00 27.82      H    O
ATOM   6716  N   ASP    99     -32.803  15.096  -1.663  1.00 28.56      H    N
ATOM   6717  CA  ASP    99     -34.121  14.950  -2.262  1.00 27.74      H    C
ATOM   6718  CB  ASP    99     -34.795  16.321  -2.466  1.00 28.14      H    C
ATOM   6719  CG  ASP    99     -34.086  17.193  -3.497  1.00 34.77      H    C
ATOM   6720  OD1 ASP    99     -32.927  17.611  -3.252  1.00 34.38      H    O
ATOM   6721  OD2 ASP    99     -34.699  17.474  -4.556  1.00 36.63      H    O
ATOM   6722  C   ASP    99     -33.963  14.219  -3.586  1.00 27.51      H    C
ATOM   6723  O   ASP    99     -33.051  14.518  -4.364  1.00 27.91      H    O
ATOM   6724  N   TYR   100     -34.832  13.244  -3.838  1.00 25.59      H    N
ATOM   6725  CA  TYR   100     -34.683  12.437  -5.036  1.00 25.30      H    C
ATOM   6726  CB  TYR   100     -35.791  11.385  -5.123  1.00 26.94      H    C
ATOM   6727  CG  TYR   100     -35.608  10.449  -6.296  1.00 28.57      H    C
ATOM   6728  CD1 TYR   100     -34.740   9.365  -6.214  1.00 28.82      H    C
ATOM   6729  CE1 TYR   100     -34.511   8.547  -7.310  1.00 28.92      H    C
ATOM   6730  CD2 TYR   100     -36.252  10.686  -7.505  1.00 28.98      H    C
ATOM   6731  CE2 TYR   100     -36.032   9.873  -8.607  1.00 31.42      H    C
ATOM   6732  CZ  TYR   100     -35.157   8.804  -8.504  1.00 32.55      H    C
ATOM   6733  OH  TYR   100     -34.924   7.999  -9.604  1.00 33.58      H    O
ATOM   6734  C   TYR   100     -34.708  13.331  -6.274  1.00 25.64      H    C
ATOM   6735  O   TYR   100     -35.485  14.289  -6.355  1.00 23.00      H    O
ATOM   6736  N   ASP   101     -33.850  13.022  -7.239  1.00 26.57      H    N
ATOM   6737  CA  ASP   101     -33.715  13.877  -8.410  1.00 28.69      H    C
ATOM   6738  CB  ASP   101     -32.296  13.760  -8.978  1.00 28.46      H    C
ATOM   6739  CG  ASP   101     -32.013  14.776 -10.074  1.00 31.11      H    C
ATOM   6740  OD1 ASP   101     -32.949  15.493 -10.483  1.00 30.58      H    O
ATOM   6741  OD2 ASP   101     -30.846  14.860 -10.525  1.00 32.28      H    O
ATOM   6742  C   ASP   101     -34.751  13.461  -9.458  1.00 28.47      H    C
ATOM   6743  O   ASP   101     -34.602  12.433 -10.112  1.00 27.60      H    O
ATOM   6744  N   PHE   102     -35.808  14.258  -9.593  1.00 28.19      H    N
ATOM   6745  CA  PHE   102     -36.838  14.019 -10.604  1.00 28.93      H    C
ATOM   6746  CB  PHE   102     -38.225  14.347 -10.036  1.00 28.62      H    C
ATOM   6747  CG  PHE   102     -38.652  13.455  -8.889  1.00 28.28      H    C
ATOM   6748  CD1 PHE   102     -39.240  12.217  -9.134  1.00 27.61      H    C
ATOM   6749  CD2 PHE   102     -38.482  13.862  -7.573  1.00 28.22      H    C
ATOM   6750  CE1 PHE   102     -39.654  11.399  -8.086  1.00 29.20      H    C
ATOM   6751  CE2 PHE   102     -38.894  13.049  -6.508  1.00 29.50      H    C
ATOM   6752  CZ  PHE   102     -39.481  11.815  -6.767  1.00 28.70      H    C
ATOM   6753  C   PHE   102     -36.578  14.871 -11.859  1.00 28.33      H    C
ATOM   6754  O   PHE   102     -37.447  15.010 -12.725  1.00 29.51      H    O
ATOM   6755  N   TRP   103     -35.384  15.451 -11.939  1.00 25.45      H    N
ATOM   6756  CA  TRP   103     -34.952  16.192 -13.123  1.00 25.17      H    C
ATOM   6757  CB  TRP   103     -34.858  15.245 -14.323  1.00 25.43      H    C
ATOM   6758  CG  TRP   103     -33.937  14.070 -14.091  1.00 26.29      H    C
ATOM   6759  CD2 TRP   103     -32.526  14.010 -14.361  1.00 27.47      H    C
ATOM   6760  CE2 TRP   103     -32.080  12.723 -13.970  1.00 27.34      H    C
ATOM   6761  CE3 TRP   103     -31.598  14.914 -14.898  1.00 26.51      H    C
ATOM   6762  CD1 TRP   103     -34.276  12.853 -13.565  1.00 26.52      H    C
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ATOM   6763  NE1 TRP   103     -33.167  12.040 -13.489  1.00 26.07      H    N
ATOM   6764  CZ2 TRP   103     -30.744  12.321 -14.093  1.00 25.38      H    C
ATOM   6765  CZ3 TRP   103     -30.272  14.514 -15.023  1.00 26.49      H    C
ATOM   6766  CH2 TRP   103     -29.858  13.225 -14.621  1.00 27.17      H    C
ATOM   6767  C   TRP   103     -35.875  17.373 -13.448  1.00 26.58      H    C
ATOM   6768  O   TRP   103     -36.174  17.644 -14.617  1.00 25.55      H    O
ATOM   6769  N   SER   104     -36.310  18.063 -12.393  1.00 26.77      H    N
ATOM   6770  CA  SER   104     -37.202  19.226 -12.456  1.00 27.21      H    C
ATOM   6771  CB  SER   104     -36.686  20.280 -13.463  1.00 28.29      H    C
ATOM   6772  OG  SER   104     -37.065  20.001 -14.806  1.00 28.50      H    O
ATOM   6773  C   SER   104     -38.655  18.875 -12.760  1.00 27.34      H    C
ATOM   6774  O   SER   104     -39.497  19.758 -12.843  1.00 29.98      H    O
ATOM   6775  N   ALA   105     -38.961  17.590 -12.911  1.00 27.05      H    N
ATOM   6776  CA  ALA   105     -40.349  17.178 -13.141  1.00 27.35      H    C
ATOM   6777  CB  ALA   105     -40.406  15.700 -13.521  1.00 25.10      H    C
ATOM   6778  C   ALA   105     -41.196  17.422 -11.893  1.00 27.00      H    C
ATOM   6779  O   ALA   105     -42.404  17.675 -11.979  1.00 26.55      H    O
ATOM   6780  N   TYR   106     -40.554  17.331 -10.733  1.00 26.09      H    N
ATOM   6781  CA  TYR   106     -41.233  17.502  -9.456  1.00 25.70      H    C
ATOM   6782  CB  TYR   106     -41.923  16.190  -9.043  1.00 27.12      H    C
ATOM   6783  CG  TYR   106     -42.597  16.242  -7.682  1.00 27.55      H    C
ATOM   6784  CD1 TYR   106     -42.076  15.545  -6.598  1.00 25.52      H    C
ATOM   6785  CE1 TYR   106     -42.678  15.609  -5.347  1.00 26.89      H    C
ATOM   6786  CD2 TYR   106     -43.745  17.009  -7.482  1.00 26.08      H    C
ATOM   6787  CE2 TYR   106     -44.349  17.085  -6.242  1.00 27.05      H    C
ATOM   6788  CZ  TYR   106     -43.810  16.383  -5.179  1.00 28.47      H    C
ATOM   6789  OH  TYR   106     -44.405  16.471  -3.945  1.00 29.33      H    O
ATOM   6790  C   TYR   106     -40.189  17.884  -8.416  1.00 27.08      H    C
ATOM   6791  O   TYR   106     -39.053  17.414  -8.468  1.00 29.19      H    O
ATOM   6792  N   TYR   107     -40.562  18.734  -7.469  1.00 27.35      H    N
ATOM   6793  CA  TYR   107     -39.632  19.091  -6.403  1.00 29.15      H    C
ATOM   6794  CB  TYR   107     -39.511  20.614  -6.307  1.00 29.00      H    C
ATOM   6795  CG  TYR   107     -38.874  21.203  -7.548  1.00 31.69      H    C
ATOM   6796  CD1 TYR   107     -39.638  21.854  -8.511  1.00 30.78      H    C
ATOM   6797  CE1 TYR   107     -39.059  22.362  -9.664  1.00 31.09      H    C
ATOM   6798  CD2 TYR   107     -37.510  21.075  -7.774  1.00 32.92      H    C
ATOM   6799  CE2 TYR   107     -36.921  21.579  -8.928  1.00 33.30      H    C
ATOM   6800  CZ  TYR   107     -37.702  22.221  -9.868  1.00 31.33      H    C
ATOM   6801  OH  TYR   107     -37.115  22.718 -11.012  1.00 31.72      H    O
ATOM   6802  C   TYR   107     -40.069  18.483  -5.078  1.00 27.80      H    C
ATOM   6803  O   TYR   107     -41.029  18.933  -4.451  1.00 27.16      H    O
ATOM   6804  N   ASP   108     -39.356  17.439  -4.673  1.00 26.30      H    N
ATOM   6805  CA  ASP   108     -39.769  16.624  -3.547  1.00 27.34      H    C
ATOM   6806  CB  ASP   108     -39.196  15.214  -3.692  1.00 28.85      H    C
ATOM   6807  CG  ASP   108     -39.932  14.183  -2.844  1.00 32.64      H    C
ATOM   6808  OD1 ASP   108     -40.918  14.543  -2.149  1.00 28.23      H    O
ATOM   6809  OD2 ASP   108     -39.517  13.002  -2.879  1.00 31.34      H    O
ATOM   6810  C   ASP   108     -39.250  17.262  -2.269  1.00 27.61      H    C
ATOM   6811  O   ASP   108     -38.456  18.203  -2.319  1.00 27.35      H    O
ATOM   6812  N   ALA   109     -39.704  16.742  -1.135  1.00 26.89      H    N
ATOM   6813  CA  ALA   109     -39.248  17.186   0.174  1.00 28.36      H    C
ATOM   6814  CB  ALA   109     -40.160  16.614   1.264  1.00 28.17      H    C
ATOM   6815  C   ALA   109     -37.814  16.734   0.409  1.00 30.74      H    C
ATOM   6816  O   ALA   109     -37.346  15.767  -0.209  1.00 30.34      H    O
ATOM   6817  N   PHE   110     -37.118  17.444   1.299  1.00 30.36      H    N
ATOM   6818  CA  PHE   110     -35.829  16.997   1.815  1.00 29.18      H    C
ATOM   6819  CB  PHE   110     -35.087  18.166   2.481  1.00 27.43      H    C
ATOM   6820  CG  PHE   110     -34.728  19.286   1.537  1.00 26.74      H    C
ATOM   6821  CD1 PHE   110     -34.084  20.420   2.006  1.00 25.08      H    C
ATOM   6822  CD2 PHE   110     -35.044  19.210   0.187  1.00 27.64      H    C
ATOM   6823  CE1 PHE   110     -33.760  21.470   1.146  1.00 29.39      H    C
ATOM   6824  CE2 PHE   110     -34.725  20.253  -0.683  1.00 31.03      H    C
ATOM   6825  CZ  PHE   110     -34.081  21.387  -0.201  1.00 28.21      H    C
ATOM   6826  C   PHE   110     -36.142  15.930   2.856  1.00 30.56      H    C
ATOM   6827  O   PHE   110     -36.469  16.256   3.999  1.00 32.31      H    O
ATOM   6828  N   ASP   111     -36.065  14.657   2.479  1.00 31.23      H    N
ATOM   6829  CA  ASP   111     -36.660  13.634   3.336  1.00 33.06      H    C
ATOM   6830  CB  ASP   111     -37.352  12.546   2.491  1.00 33.67      H    C
ATOM   6831  CG  ASP   111     -36.385  11.710   1.664  1.00 37.65      H    C
ATOM   6832  OD1 ASP   111     -35.276  12.183   1.326  1.00 37.86      H    O
ATOM   6833  OD2 ASP   111     -36.756  10.560   1.344  1.00 38.69      H    O
ATOM   6834  C   ASP   111     -35.717  13.009   4.355  1.00 32.70      H    C
ATOM   6835  O   ASP   111     -36.162  12.365   5.305  1.00 33.78      H    O
ATOM   6836  N   VAL   112     -34.418  13.213   4.167  1.00 32.63      H    N
ATOM   6837  CA  VAL   112     -33.425  12.801   5.151  1.00 32.15      H    C
ATOM   6838  CB  VAL   112     -32.689  11.505   4.708  1.00 33.32      H    C
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ATOM   6839  CG1 VAL   112     -31.585  11.153   5.718  1.00 30.53      H    C
ATOM   6840  CG2 VAL   112     -33.688  10.356   4.599  1.00 31.40      H    C
ATOM   6841  C   VAL   112     -32.400  13.914   5.343  1.00 32.58      H    C
ATOM   6842  O   VAL   112     -31.889  14.476   4.370  1.00 33.04      H    O
ATOM   6843  N   TRP   113     -32.112  14.228   6.602  1.00 32.15      H    N
ATOM   6844  CA  TRP   113     -31.161  15.277   6.953  1.00 31.65      H    C
ATOM   6845  CB  TRP   113     -31.843  16.338   7.816  1.00 29.50      H    C
ATOM   6846  CG  TRP   113     -32.931  17.105   7.128  1.00 28.47      H    C
ATOM   6847  CD2 TRP   113     -33.006  18.527   6.977  1.00 25.65      H    C
ATOM   6848  CE2 TRP   113     -34.217  18.813   6.315  1.00 26.45      H    C
ATOM   6849  CE3 TRP   113     -32.167  19.586   7.341  1.00 24.52      H    C
ATOM   6850  CD1 TRP   113     -34.069  16.597   6.562  1.00 26.10      H    C
ATOM   6851  NE1 TRP   113     -34.847  17.620   6.074  1.00 28.26      H    N
ATOM   6852  CZ2 TRP   113     -34.611  20.118   6.008  1.00 26.31      H    C
ATOM   6853  CZ3 TRP   113     -32.558  20.886   7.037  1.00 24.40      H    C
ATOM   6854  CH2 TRP   113     -33.771  21.139   6.377  1.00 25.50      H    C
ATOM   6855  C   TRP   113     -29.996  14.687   7.746  1.00 33.12      H    C
ATOM   6856  O   TRP   113     -30.136  13.634   8.371  1.00 31.88      H    O
ATOM   6857  N   GLY   114     -28.855  15.373   7.723  1.00 32.68      H    N
ATOM   6858  CA  GLY   114     -27.776  15.044   8.639  1.00 35.69      H    C
ATOM   6859  C   GLY   114     -27.980  15.743   9.974  1.00 37.38      H    C
ATOM   6860  O   GLY   114     -28.984  16.429  10.170  1.00 38.62      H    O
ATOM   6861  N   GLN   115     -27.036  15.587  10.894  1.00 38.12      H    N
ATOM   6862  CA  GLN   115     -27.189  16.182  12.218  1.00 40.72      H    C
ATOM   6863  CB  GLN   115     -26.590  15.262  13.285  1.00 43.53      H    C
ATOM   6864  CG  GLN   115     -27.488  14.063  13.619  1.00 51.75      H    C
ATOM   6865  CD  GLN   115     -28.955  14.461  13.857  1.00 56.93      H    C
ATOM   6866  OE1 GLN   115     -29.269  15.223  14.778  1.00 58.91      H    O
ATOM   6867  NE2 GLN   115     -29.853  13.944  13.018  1.00 58.11      H    N
ATOM   6868  C   GLN   115     -26.573  17.573  12.303  1.00 39.58      H    C
ATOM   6869  O   GLN   115     -26.820  18.321  13.254  1.00 38.68      H    O
ATOM   6870  N   GLY   116     -25.782  17.928  11.298  1.00 37.78      H    N
ATOM   6871  CA  GLY   116     -25.283  19.285  11.220  1.00 38.42      H    C
ATOM   6872  C   GLY   116     -23.874  19.439  11.752  1.00 39.35      H    C
ATOM   6873  O   GLY   116     -23.407  18.644  12.568  1.00 39.93      H    O
ATOM   6874  N   THR   117     -23.188  20.466  11.267  1.00 39.58      H    N
ATOM   6875  CA  THR   117     -21.862  20.803  11.750  1.00 39.22      H    C
ATOM   6876  CB  THR   117     -20.776  20.415  10.720  1.00 39.77      H    C
ATOM   6877  OG1 THR   117     -19.482  20.645  11.284  1.00 41.61      H    O
ATOM   6878  CG2 THR   117     -20.912  21.241   9.445  1.00 38.56      H    C
ATOM   6879  C   THR   117     -21.849  22.306  11.985  1.00 38.56      H    C
ATOM   6880  O   THR   117     -22.412  23.063  11.194  1.00 39.43      H    O
ATOM   6881  N   MET   118     -21.227  22.733  13.079  1.00 38.05      H    N
ATOM   6882  CA  MET   118     -21.275  24.134  13.498  1.00 36.74      H    C
ATOM   6883  CB  MET   118     -21.189  24.230  15.024  1.00 38.21      H    C
ATOM   6884  CG  MET   118     -21.254  25.649  15.561  1.00 41.58      H    C
ATOM   6885  SD  MET   118     -22.818  26.465  15.157  1.00 50.65      H    S
ATOM   6886  CE  MET   118     -22.441  28.169  15.524  1.00 47.35      H    C
ATOM   6887  C   MET   118     -20.147  24.946  12.871  1.00 34.48      H    C
ATOM   6888  O   MET   118     -19.013  24.487  12.768  1.00 34.26      H    O
ATOM   6889  N   VAL   119     -20.474  26.159  12.449  1.00 34.68      H    N
ATOM   6890  CA  VAL   119     -19.506  27.054  11.833  1.00 33.91      H    C
ATOM   6891  CB  VAL   119     -19.783  27.251  10.311  1.00 33.34      H    C
ATOM   6892  CG1 VAL   119     -19.007  28.445   9.793  1.00 33.26      H    C
ATOM   6893  CG2 VAL   119     -19.376  26.001   9.531  1.00 31.55      H    C
ATOM   6894  C   VAL   119     -19.643  28.389  12.520  1.00 34.59      H    C
ATOM   6895  O   VAL   119     -20.724  28.981  12.517  1.00 37.76      H    O
ATOM   6896  N   THR   120     -18.553  28.863  13.117  1.00 34.91      H    N
ATOM   6897  CA  THR   120     -18.554  30.171  13.762  1.00 35.35      H    C
ATOM   6898  CB  THR   120     -18.134  30.073  15.256  1.00 35.88      H    C
ATOM   6899  OG1 THR   120     -19.037  29.212  15.960  1.00 37.94      H    O
ATOM   6900  CG2 THR   120     -18.154  31.444  15.902  1.00 34.25      H    C
ATOM   6901  C   THR   120     -17.578  31.085  13.038  1.00 35.16      H    C
ATOM   6902  O   THR   120     -16.442  30.705  12.768  1.00 35.56      H    O
ATOM   6903  N   VAL   121     -18.028  32.291  12.721  1.00 36.37      H    N
ATOM   6904  CA  VAL   121     -17.166  33.271  12.088  1.00 37.55      H    C
ATOM   6905  CB  VAL   121     -17.718  33.687  10.703  1.00 38.08      H    C
ATOM   6906  CG1 VAL   121     -16.839  34.765  10.089  1.00 36.30      H    C
ATOM   6907  CG2 VAL   121     -17.774  32.470   9.784  1.00 36.74      H    C
ATOM   6908  C   VAL   121     -17.063  34.491  12.985  1.00 38.28      H    C
ATOM   6909  O   VAL   121     -18.029  35.233  13.156  1.00 39.94      H    O
ATOM   6910  N   SER   122     -15.884  34.694  13.563  1.00 38.45      H    N
ATOM   6911  CA  SER   122     -15.694  35.755  14.550  1.00 39.93      H    C
ATOM   6912  CB  SER   122     -15.947  35.209  15.962  1.00 40.21      H    C
ATOM   6913  OG  SER   122     -15.882  36.242  16.929  1.00 42.15      H    O
ATOM   6914  C   SER   122     -14.284  36.331  14.473  1.00 39.50      H    C
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ATOM   6915  O   SER   122     -13.320  35.615  14.199  1.00 37.65      H    O
ATOM   6916  N   SER   123     -14.165  37.627  14.726  1.00 41.58      H    N
ATOM   6917  CA  SER   123     -12.849  38.253  14.807  1.00 44.16      H    C
ATOM   6918  CB  SER   123     -12.993  39.776  14.777  1.00 44.85      H    C
ATOM   6919  OG  SER   123     -13.875  40.223  15.794  1.00 49.05      H    O
ATOM   6920  C   SER   123     -12.105  37.819  16.079  1.00 44.60      H    C
ATOM   6921  O   SER   123     -10.893  37.995  16.184  1.00 45.68      H    O
ATOM   6922  N   ALA   124     -12.837  37.240  17.031  1.00 43.93      H    N
ATOM   6923  CA  ALA   124     -12.262  36.801  18.301  1.00 42.24      H    C
ATOM   6924  CB  ALA   124     -13.326  36.848  19.390  1.00 40.10      H    C
ATOM   6925  C   ALA   124     -11.675  35.394  18.214  1.00 42.14      H    C
ATOM   6926  O   ALA   124     -12.274  34.500  17.620  1.00 43.33      H    O
ATOM   6927  N   SER   125     -10.503  35.201  18.820  1.00 42.38      H    N
ATOM   6928  CA  SER   125      -9.862  33.887  18.876  1.00 40.59      H    C
ATOM   6929  CB  SER   125      -8.355  34.041  19.109  1.00 42.02      H    C
ATOM   6930  OG  SER   125      -7.752  34.799  18.072  1.00 45.10      H    O
ATOM   6931  C   SER   125     -10.466  33.067  20.010  1.00 38.95      H    C
ATOM   6932  O   SER   125     -11.093  33.619  20.907  1.00 37.48      H    O
ATOM   6933  N   THR   126     -10.271  31.753  19.977  1.00 37.66      H    N
ATOM   6934  CA  THR   126     -10.785  30.905  21.042  1.00 39.23      H    C
ATOM   6935  CB  THR   126     -10.669  29.419  20.674  1.00 38.28      H    C
ATOM   6936  OG1 THR   126     -11.284  28.629  21.697  1.00 41.97      H    O
ATOM   6937  CG2 THR   126      -9.217  29.008  20.533  1.00 37.08      H    C
ATOM   6938  C   THR   126     -10.049  31.147  22.370  1.00 41.01      H    C
ATOM   6939  O   THR   126      -8.841  31.397  22.392  1.00 41.24      H    O
ATOM   6940  N   LYS   127     -10.794  31.074  23.471  1.00 40.95      H    N
ATOM   6941  CA  LYS   127     -10.262  31.339  24.806  1.00 38.98      H    C
ATOM   6942  CB  LYS   127     -10.599  32.771  25.231  1.00 38.46      H    C
ATOM   6943  CG  LYS   127     -10.108  33.139  26.625  1.00 39.85      H    C
ATOM   6944  CD  LYS   127     -10.561  34.529  27.043  1.00 39.69      H    C
ATOM   6945  CE  LYS   127     -10.208  34.833  28.494  1.00 40.59      H    C
ATOM   6946  NZ  LYS   127     -10.600  33.727  29.429  1.00 41.49      H    N
ATOM   6947  C   LYS   127     -10.862  30.359  25.809  1.00 37.64      H    C
ATOM   6948  O   LYS   127     -12.080  30.248  25.916  1.00 37.85      H    O
ATOM   6949  N   GLY   128     -10.005  29.648  26.536  1.00 36.50      H    N
ATOM   6950  CA  GLY   128     -10.476  28.740  27.566  1.00 33.05      H    C
ATOM   6951  C   GLY   128     -11.064  29.484  28.750  1.00 32.53      H    C
ATOM   6952  O   GLY   128     -10.832  30.681  28.923  1.00 32.58      H    O
ATOM   6953  N   PRO   129     -11.856  28.798  29.578  1.00 32.14      H    N
ATOM   6954  CD  PRO   129     -12.255  27.396  29.361  1.00 32.62      H    C
ATOM   6955  CA  PRO   129     -12.553  29.387  30.728  1.00 32.53      H    C
ATOM   6956  CB  PRO   129     -13.695  28.411  30.978  1.00 31.17      H    C
ATOM   6957  CG  PRO   129     -13.119  27.096  30.561  1.00 30.16      H    C
ATOM   6958  C   PRO   129     -11.663  29.522  31.967  1.00 33.22      H    C
ATOM   6959  O   PRO   129     -10.742  28.732  32.161  1.00 31.90      H    O
ATOM   6960  N   SER   130     -11.954  30.513  32.804  1.00 32.62      H    N
ATOM   6961  CA  SER   130     -11.478  30.505  34.185  1.00 35.02      H    C
ATOM   6962  CB  SER   130     -11.275  31.932  34.687  1.00 34.24      H    C
ATOM   6963  OG  SER   130     -10.239  32.566  33.964  1.00 41.41      H    O
ATOM   6964  C   SER   130     -12.522  29.807  35.050  1.00 35.50      H    C
ATOM   6965  O   SER   130     -13.708  30.118  34.958  1.00 37.01      H    O
ATOM   6966  N   VAL   131     -12.091  28.868  35.884  1.00 34.84      H    N
ATOM   6967  CA  VAL   131     -13.026  28.121  36.716  1.00 34.36      H    C
ATOM   6968  CB  VAL   131     -12.840  26.605  36.526  1.00 34.23      H    C
ATOM   6969  CG1 VAL   131     -13.882  25.848  37.333  1.00 33.85      H    C
ATOM   6970  CG2 VAL   131     -12.938  26.251  35.046  1.00 34.73      H    C
ATOM   6971  C   VAL   131     -12.860  28.460  38.198  1.00 35.71      H    C
ATOM   6972  O   VAL   131     -11.760  28.349  38.750  1.00 35.77      H    O
ATOM   6973  N   PHE   132     -13.955  28.878  38.834  1.00 34.57      H    N
ATOM   6974  CA  PHE   132     -13.953  29.184  40.261  1.00 33.58      H    C
ATOM   6975  CB  PHE   132     -14.266  30.664  40.489  1.00 32.57      H    C
ATOM   6976  CG  PHE   132     -13.327  31.593  39.782  1.00 34.21      H    C
ATOM   6977  CD1 PHE   132     -12.103  31.922  40.344  1.00 35.59      H    C
ATOM   6978  CD2 PHE   132     -13.651  32.114  38.538  1.00 33.19      H    C
ATOM   6979  CE1 PHE   132     -11.214  32.750  39.674  1.00 37.01      H    C
ATOM   6980  CE2 PHE   132     -12.769  32.943  37.862  1.00 35.41      H    C
ATOM   6981  CZ  PHE   132     -11.548  33.262  38.430  1.00 36.28      H    C
ATOM   6982  C   PHE   132     -14.963  28.325  41.022  1.00 34.57      H    C
ATOM   6983  O   PHE   132     -16.041  28.012  40.512  1.00 32.06      H    O
ATOM   6984  N   PRO   133     -14.617  27.927  42.258  1.00 34.29      H    N
ATOM   6985  CD  PRO   133     -13.324  28.197  42.918  1.00 34.35      H    C
ATOM   6986  CA  PRO   133     -15.511  27.132  43.108  1.00 35.13      H    C
ATOM   6987  CB  PRO   133     -14.593  26.624  44.220  1.00 33.32      H    C
ATOM   6988  CG  PRO   133     -13.541  27.689  44.336  1.00 34.24      H    C
ATOM   6989  C   PRO   133     -16.645  27.983  43.662  1.00 35.55      H    C
ATOM   6990  O   PRO   133     -16.426  29.128  44.068  1.00 36.64      H    O
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ATOM   6991  N   LEU  134      -17.852  27.424  43.674  1.00 35.32      H    N
ATOM   6992  CA  LEU  134      -18.977  28.048  44.366  1.00 36.08      H    C
ATOM   6993  CB  LEU  134      -20.209  28.094  43.450  1.00 34.28      H    C
ATOM   6994  CG  LEU  134      -19.960  28.860  42.142  1.00 34.73      H    C
ATOM   6995  CD1 LEU  134      -21.140  28.718  41.185  1.00 31.18      H    C
ATOM   6996  CD2 LEU  134      -19.697  30.321  42.475  1.00 33.05      H    C
ATOM   6997  C   LEU  134      -19.259  27.224  45.618  1.00 36.52      H    C
ATOM   6998  O   LEU  134      -19.999  26.234  45.585  1.00 34.85      H    O
ATOM   6999  N   ALA  135      -18.645  27.635  46.720  1.00 37.22      H    N
ATOM   7000  CA  ALA  135      -18.596  26.810  47.917  1.00 40.97      H    C
ATOM   7001  CB  ALA  135      -17.561  27.367  48.891  1.00 38.81      H    C
ATOM   7002  C   ALA  135      -19.957  26.725  48.594  1.00 44.00      H    C
ATOM   7003  O   ALA  135      -20.712  27.697  48.626  1.00 40.78      H    O
ATOM   7004  N   PRO  136      -20.283  25.550  49.148  1.00 48.76      H    N
ATOM   7005  CD  PRO  136      -19.446  24.338  49.152  1.00 49.46      H    C
ATOM   7006  CA  PRO  136      -21.531  25.360  49.890  1.00 54.13      H    C
ATOM   7007  CB  PRO  136      -21.528  23.874  50.232  1.00 52.72      H    C
ATOM   7008  CG  PRO  136      -20.085  23.486  50.205  1.00 51.83      H    C
ATOM   7009  C   PRO  136      -21.586  26.238  51.132  1.00 59.78      H    C
ATOM   7010  O   PRO  136      -20.570  26.460  51.794  1.00 59.54      H    O
ATOM   7011  N   SER  137      -22.782  26.737  51.432  1.00 67.10      H    N
ATOM   7012  CA  SER  137      -22.993  27.638  52.560  1.00 74.14      H    C
ATOM   7013  CB  SER  137      -24.411  28.215  52.507  1.00 75.09      H    C
ATOM   7014  OG  SER  137      -24.664  29.061  53.617  1.00 78.01      H    O
ATOM   7015  C   SER  137      -22.774  26.926  53.892  1.00 77.67      H    C
ATOM   7016  O   SER  137      -22.866  25.699  53.977  1.00 78.44      H    O
ATOM   7017  N   SER  138      -22.492  27.707  54.931  1.00 82.40      H    N
ATOM   7018  CA  SER  138      -22.171  27.163  56.248  1.00 86.84      H    C
ATOM   7019  CB  SER  138      -21.280  28.151  57.011  1.00 87.07      H    C
ATOM   7020  OG  SER  138      -20.112  28.463  56.271  1.00 87.61      H    O
ATOM   7021  C   SER  138      -23.414  26.841  57.087  1.00 89.30      H    C
ATOM   7022  O   SER  138      -23.688  27.512  58.085  1.00 89.91      H    O
ATOM   7023  N   LYS  139      -24.161  25.816  56.678  1.00 91.76      H    N
ATOM   7024  CA  LYS  139      -25.298  25.325  57.457  1.00 93.44      H    C
ATOM   7025  CB  LYS  139      -26.616  25.879  56.899  1.00 93.81      H    C
ATOM   7026  CG  LYS  139      -26.910  27.321  57.291  1.00 94.61      H    C
ATOM   7027  CD  LYS  139      -26.118  28.303  56.442  1.00 95.03      H    C
ATOM   7028  CE  LYS  139      -26.243  29.721  56.976  1.00 95.42      H    C
ATOM   7029  NZ  LYS  139      -25.510  30.700  56.125  1.00 95.24      H    N
ATOM   7030  C   LYS  139      -25.349  23.798  57.464  1.00 94.08      H    C
ATOM   7031  O   LYS  139      -26.414  23.202  57.638  1.00 95.08      H    O
ATOM   7032  N   GLY  143      -30.107  19.527  59.281  1.00 59.11      H    N
ATOM   7033  CA  GLY  143      -29.319  19.470  58.062  1.00 61.11      H    C
ATOM   7034  C   GLY  143      -29.957  18.625  56.968  1.00 60.28      H    C
ATOM   7035  O   GLY  143      -30.100  17.406  57.106  1.00 60.72      H    O
ATOM   7036  N   GLY  144      -30.342  19.280  55.877  1.00 58.29      H    N
ATOM   7037  CA  GLY  144      -30.925  18.578  54.746  1.00 54.60      H    C
ATOM   7038  C   GLY  144      -29.972  18.554  53.562  1.00 52.81      H    C
ATOM   7039  O   GLY  144      -29.023  17.772  53.550  1.00 53.00      H    O
ATOM   7040  N   THR  145      -30.216  19.401  52.565  1.00 49.01      H    N
ATOM   7041  CA  THR  145      -29.334  19.461  51.403  1.00 46.11      H    C
ATOM   7042  CB  THR  145      -30.109  19.311  50.080  1.00 46.35      H    C
ATOM   7043  OG1 THR  145      -31.019  20.410  49.929  1.00 48.50      H    O
ATOM   7044  CG2 THR  145      -30.877  18.001  50.056  1.00 44.98      H    C
ATOM   7045  C   THR  145      -28.562  20.775  51.343  1.00 44.27      H    C
ATOM   7046  O   THR  145      -28.979  21.788  51.912  1.00 42.47      H    O
ATOM   7047  N   ALA  146      -27.428  20.751  50.651  1.00 41.79      H    N
ATOM   7048  CA  ALA  146      -26.691  21.974  50.374  1.00 40.00      H    C
ATOM   7049  CB  ALA  146      -25.407  22.009  51.187  1.00 40.43      H    C
ATOM   7050  C   ALA  146      -26.374  22.057  48.888  1.00 39.46      H    C
ATOM   7051  O   ALA  146      -26.227  21.037  48.212  1.00 38.93      H    O
ATOM   7052  N   ALA  147      -26.278  23.279  48.380  1.00 37.34      H    N
ATOM   7053  CA  ALA  147      -25.943  23.491  46.986  1.00 35.51      H    C
ATOM   7054  CB  ALA  147      -26.894  24.512  46.374  1.00 34.09      H    C
ATOM   7055  C   ALA  147      -24.500  23.977  46.874  1.00 35.59      H    C
ATOM   7056  O   ALA  147      -24.055  24.852  47.620  1.00 35.64      H    O
ATOM   7057  N   LEU  148      -23.765  23.396  45.942  1.00 34.79      H    N
ATOM   7058  CA  LEU  148      -22.421  23.857  45.658  1.00 34.42      H    C
ATOM   7059  CB  LEU  148      -21.402  23.008  46.425  1.00 35.26      H    C
ATOM   7060  CG  LEU  148      -21.395  21.515  46.088  1.00 38.02      H    C
ATOM   7061  CD1 LEU  148      -20.408  21.250  44.961  1.00 38.18      H    C
ATOM   7062  CD2 LEU  148      -21.011  20.713  47.323  1.00 39.69      H    C
ATOM   7063  C   LEU  148      -22.221  23.721  44.159  1.00 33.02      H    C
ATOM   7064  O   LEU  148      -22.934  22.968  43.498  1.00 32.43      H    O
ATOM   7065  N   GLY  149      -21.267  24.457  43.612  1.00 32.54      H    N
ATOM   7066  CA  GLY  149      -21.040, 24.349  42.187  1.00 35.20      H    C
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ATOM   7067  C   GLY   149     -19.729  24.945  41.742  1.00 35.35      H    C
ATOM   7068  O   GLY   149     -18.812  25.171  42.537  1.00 34.93      H    O
ATOM   7069  N   CYS   150     -19.626  25.201  40.451  1.00 36.17      H    N
ATOM   7070  CA  CYS   150     -18.464  25.898  39.974  1.00 38.63      H    C
ATOM   7071  C   CYS   150     -18.825  26.843  38.841  1.00 36.98      H    C
ATOM   7072  O   CYS   150     -19.729  26.576  38.048  1.00 37.67      H    O
ATOM   7073  CB  CYS   150     -17.360  24.886  39.601  1.00 42.69      H    C
ATOM   7074  SG  CYS   150     -17.554  23.900  38.089  1.00 55.77      H    S
ATOM   7075  N   LEU   151     -18.141  27.981  38.818  1.00 35.05      H    N
ATOM   7076  CA  LEU   151     -18.431  29.068  37.898  1.00 33.32      H    C
ATOM   7077  CB  LEU   151     -18.334  30.397  38.640  1.00 31.86      H    C
ATOM   7078  CG  LEU   151     -18.258  31.673  37.803  1.00 34.10      H    C
ATOM   7079  CD1 LEU   151     -19.607  31.930  37.141  1.00 31.52      H    C
ATOM   7080  CD2 LEU   151     -17.863  32.841  38.701  1.00 32.35      H    C
ATOM   7081  C   LEU   151     -17.415  29.035  36.764  1.00 35.15      H    C
ATOM   7082  O   LEU   151     -16.204  29.012  37.002  1.00 34.70      H    O
ATOM   7083  N   VAL   152     -17.909  29.034  35.531  1.00 35.15      H    N
ATOM   7084  CA  VAL   152     -17.053  28.860  34.365  1.00 33.97      H    C
ATOM   7085  CB  VAL   152     -17.542  27.662  33.519  1.00 34.25      H    C
ATOM   7086  CG1 VAL   152     -16.662  27.474  32.298  1.00 33.15      H    C
ATOM   7087  CG2 VAL   152     -17.540  26.398  34.373  1.00 33.07      H    C
ATOM   7088  C   VAL   152     -17.090  30.136  33.536  1.00 35.52      H    C
ATOM   7089  O   VAL   152     -18.059  30.388  32.816  1.00 35.70      H    O
ATOM   7090  N   LYS   153     -16.025  30.931  33.644  1.00 35.56      H    N
ATOM   7091  CA  LYS   153     -16.020  32.325  33.194  1.00 36.98      H    C
ATOM   7092  CB  LYS   153     -15.435  33.227  34.288  1.00 37.29      H    C
ATOM   7093  CG  LYS   153     -16.456  33.857  35.205  1.00 44.06      H    C
ATOM   7094  CD  LYS   153     -15.778  34.702  36.286  1.00 45.54      H    C
ATOM   7095  CE  LYS   153     -15.056  35.903  35.687  1.00 48.07      H    C
ATOM   7096  NZ  LYS   153     -14.280  36.672  36.708  1.00 48.70      H    N
ATOM   7097  C   LYS   153     -15.250  32.589  31.896  1.00 35.32      H    C
ATOM   7098  O   LYS   153     -14.178  32.029  31.674  1.00 33.48      H    O
ATOM   7099  N   ASP   154     -15.803  33.466  31.061  1.00 35.67      H    N
ATOM   7100  CA  ASP   154     -15.069  34.081  29.951  1.00 38.13      H    C
ATOM   7101  CB  ASP   154     -13.929  34.957  30.488  1.00 38.72      H    C
ATOM   7102  CG  ASP   154     -14.421  36.122  31.326  1.00 42.66      H    C
ATOM   7103  OD1 ASP   154     -15.540  36.626  31.078  1.00 42.06      H    O
ATOM   7104  OD2 ASP   154     -13.675  36.538  32.241  1.00 47.57      H    O
ATOM   7105  C   ASP   154     -14.473  33.096  28.945  1.00 37.85      H    C
ATOM   7106  O   ASP   154     -13.271  33.134  28.676  1.00 39.38      H    O
ATOM   7107  N   TYR   155     -15.286  32.217  28.377  1.00 36.72      H    N
ATOM   7108  CA  TYR   155     -14.769  31.349  27.326  1.00 35.87      H    C
ATOM   7109  CB  TYR   155     -15.004  29.883  27.690  1.00 35.27      H    C
ATOM   7110  CG  TYR   155     -16.462  29.508  27.807  1.00 37.64      H    C
ATOM   7111  CD1 TYR   155     -17.179  29.084  26.693  1.00 36.63      H    C
ATOM   7112  CE1 TYR   155     -18.510  28.735  26.793  1.00 38.10      H    C
ATOM   7113  CD2 TYR   155     -17.123  29.569  29.032  1.00 36.52      H    C
ATOM   7114  CE2 TYR   155     -18.457  29.217  29.140  1.00 36.48      H    C
ATOM   7115  CZ  TYR   155     -19.144  28.802  28.017  1.00 37.43      H    C
ATOM   7116  OH  TYR   155     -20.475  28.465  28.105  1.00 38.45      H    O
ATOM   7117  C   TYR   155     -15.398  31.670  25.966  1.00 36.12      H    C
ATOM   7118  O   TYR   155     -16.382  32.414  25.881  1.00 35.25      H    O
ATOM   7119  N   PHE   156     -14.814  31.116  24.908  1.00 36.85      H    N
ATOM   7120  CA  PHE   156     -15.321  31.310  23.554  1.00 38.37      H    C
ATOM   7121  CB  PHE   156     -15.072  32.745  23.088  1.00 38.82      H    C
ATOM   7122  CG  PHE   156     -15.588  33.032  21.705  1.00 42.82      H    C
ATOM   7123  CD1 PHE   156     -14.798  32.792  20.588  1.00 43.82      H    C
ATOM   7124  CD2 PHE   156     -16.870  33.526  21.516  1.00 43.40      H    C
ATOM   7125  CE1 PHE   156     -15.280  33.039  19.308  1.00 44.30      H    C
ATOM   7126  CE2 PHE   156     -17.358  33.774  20.235  1.00 43.81      H    C
ATOM   7127  CZ  PHE   156     -16.561  33.530  19.134  1.00 41.90      H    C
ATOM   7128  C   PHE   156     -14.646  30.342  22.593  1.00 39.91      H    C
ATOM   7129  O   PHE   156     -13.452  30.067  22.710  1.00 40.67      H    O
ATOM   7130  N   PRO   157     -15.410  29.793  21.635  1.00 40.59      H    N
ATOM   7131  CD  PRO   157     -14.843  29.059  20.491  1.00 41.29      H    C
ATOM   7132  CA  PRO   157     -16.873  29.867  21.549  1.00 40.24      H    C
ATOM   7133  CB  PRO   157     -17.141  29.658  20.065  1.00 41.39      H    C
ATOM   7134  CG  PRO   157     -16.070  28.698  19.661  1.00 42.40      H    C
ATOM   7135  C   PRO   157     -17.533  28.777  22.402  1.00 38.74      H    C
ATOM   7136  O   PRO   157     -16.863  28.082  23.163  1.00 36.64      H    O
ATOM   7137  N   GLU   158     -18.845  28.619  22.258  1.00 39.77      H    N
ATOM   7138  CA  GLU   158     -19.543  27.476  22.849  1.00 41.74      H    C
ATOM   7139  CB  GLU   158     -21.058  27.665  22.739  1.00 40.97      H    C
ATOM   7140  CG  GLU   158     -21.620  28.752  23.634  1.00 42.42      H    C
ATOM   7141  CD  GLU   158     -22.272  28.194  24.893  1.00 45.45      H    C
ATOM   7142  OE1 GLU   158     -21.641  27.366  25.594  1.00 47.64      H    O
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ATOM   7143  OE2 GLU   158     -23.423  28.583  25.182  1.00 45.92      H    O
ATOM   7144  C   GLU   158     -19.135  26.202  22.117  1.00 41.79      H    C
ATOM   7145  O   GLU   158     -18.668  26.257  20.981  1.00 43.21      H    O
ATOM   7146  N   PRO   159     -19.324  25.031  22.746  1.00 43.12      H    N
ATOM   7147  CD  PRO   159     -19.151  23.773  21.993  1.00 40.80      H    C
ATOM   7148  CA  PRO   159     -19.854  24.763  24.090  1.00 42.75      H    C
ATOM   7149  CB  PRO   159     -20.732  23.545  23.861  1.00 41.21      H    C
ATOM   7150  CG  PRO   159     -19.907  22.746  22.852  1.00 42.04      H    C
ATOM   7151  C   PRO   159     -18.755  24.454  25.116  1.00 43.47      H    C
ATOM   7152  O   PRO   159     -17.610  24.204  24.748  1.00 43.74      H    O
ATOM   7153  N   VAL   160     -19.112  24.440  26.399  1.00 44.59      H    N
ATOM   7154  CA  VAL   160     -18.333  23.682  27.381  1.00 45.26      H    C
ATOM   7155  CB  VAL   160     -17.819  24.563  28.546  1.00 44.95      H    C
ATOM   7156  CG1 VAL   160     -17.135  25.800  28.015  1.00 45.98      H    C
ATOM   7157  CG2 VAL   160     -18.960  24.931  29.455  1.00 47.14      H    C
ATOM   7158  C   VAL   160     -19.223  22.598  27.980  1.00 45.46      H    C
ATOM   7159  O   VAL   160     -20.436  22.770  28.090  1.00 45.76      H    O
ATOM   7160  N   THR   161     -18.621  21.479  28.358  1.00 44.80      H    N
ATOM   7161  CA  THR   161     -19.341  20.457  29.095  1.00 45.47      H    C
ATOM   7162  CB  THR   161     -19.128  19.065  28.470  1.00 47.53      H    C
ATOM   7163  OG1 THR   161     -17.767  18.658  28.658  1.00 50.04      H    O
ATOM   7164  CG2 THR   161     -19.424  19.101  26.973  1.00 47.52      H    C
ATOM   7165  C   THR   161     -18.838  20.440  30.536  1.00 44.68      H    C
ATOM   7166  O   THR   161     -17.665  20.714  30.800  1.00 44.39      H    O
ATOM   7167  N   VAL   162     -19.733  20.131  31.468  1.00 43.69      H    N
ATOM   7168  CA  VAL   162     -19.364  20.021  32.874  1.00 42.46      H    C
ATOM   7169  CB  VAL   162     -19.983  21.165  33.710  1.00 41.02      H    C
ATOM   7170  CG1 VAL   162     -19.557  21.033  35.159  1.00 39.15      H    C
ATOM   7171  CG2 VAL   162     -19.553  22.510  33.154  1.00 39.60      H    C
ATOM   7172  C   VAL   162     -19.853  18.692  33.439  1.00 42.98      H    C
ATOM   7173  O   VAL   162     -21.023  18.344  33.302  1.00 44.77      H    O
ATOM   7174  N   SER   163     -18.955  17.947  34.067  1.00 41.43      H    N
ATOM   7175  CA  SER   163     -19.347  16.736  34.767  1.00 41.82      H    C
ATOM   7176  CB  SER   163     -18.732  15.503  34.095  1.00 43.74      H    C
ATOM   7177  OG  SER   163     -17.328  15.465  34.281  1.00 47.54      H    O
ATOM   7178  C   SER   163     -18.854  16.852  36.199  1.00 40.92      H    C
ATOM   7179  O   SER   163     -18.027  17.710  36.505  1.00 40.33      H    O
ATOM   7180  N   TRP   164     -19.366  16.003  37.081  1.00 39.41      H    N
ATOM   7181  CA  TRP   164     -18.936  16.031  38.469  1.00 39.92      H    C
ATOM   7182  CB  TRP   164     -20.109  16.427  39.367  1.00 38.97      H    C
ATOM   7183  CG  TRP   164     -20.453  17.878  39.251  1.00 36.68      H    C
ATOM   7184  CD2 TRP   164     -19.970  18.936  40.083  1.00 35.35      H    C
ATOM   7185  CE2 TRP   164     -20.531  20.138  39.599  1.00 35.70      H    C
ATOM   7186  CE3 TRP   164     -19.117  18.986  41.189  1.00 35.83      H    C
ATOM   7187  CD1 TRP   164     -21.268  18.463  38.320  1.00 36.06      H    C
ATOM   7188  NE1 TRP   164     -21.319  19.823  38.524  1.00 34.61      H    N
ATOM   7189  CZ2 TRP   164     -20.265  21.372  40.185  1.00 36.66      H    C
ATOM   7190  CZ3 TRP   164     -18.853  20.214  41.770  1.00 38.04      H    C
ATOM   7191  CH2 TRP   164     -19.427  21.392  41.266  1.00 37.96      H    C
ATOM   7192  C   TRP   164     -18.365  14.690  38.899  1.00 41.57      H    C
ATOM   7193  O   TRP   164     -18.923  13.641  38.579  1.00 41.54      H    O
ATOM   7194  N   ASN   165     -17.247  14.734  39.623  1.00 43.99      H    N
ATOM   7195  CA  ASN   165     -16.524  13.531  40.015  1.00 45.28      H    C
ATOM   7196  CB  ASN   165     -17.216  12.870  41.211  1.00 44.38      H    C
ATOM   7197  CG  ASN   165     -17.097  13.698  42.477  1.00 44.74      H    C
ATOM   7198  OD1 ASN   165     -16.354  14.679  42.515  1.00 48.85      H    O
ATOM   7199  ND2 ASN   165     -17.823  13.309  43.520  1.00 43.07      H    N
ATOM   7200  C   ASN   165     -16.426  12.552  38.848  1.00 48.10      H    C
ATOM   7201  O   ASN   165     -16.682  11.358  38.998  1.00 48.86      H    O
ATOM   7202  N   SER   166     -16.071  13.075  37.679  1.00 50.62      H    N
ATOM   7203  CA  SER   166     -15.795  12.251  36.507  1.00 54.00      H    C
ATOM   7204  CB  SER   166     -14.620  11.310  36.787  1.00 54.39      H    C
ATOM   7205  OG  SER   166     -13.465  12.038  37.171  1.00 56.87      H    O
ATOM   7206  C   SER   166     -17.003  11.436  36.065  1.00 55.66      H    C
ATOM   7207  O   SER   166     -16.854  10.353  35.505  1.00 56.97      H    O
ATOM   7208  N   GLY   167     -18.199  11.958  36.317  1.00 56.98      H    N
ATOM   7209  CA  GLY   167     -19.403  11.303  35.835  1.00 56.82      H    C
ATOM   7210  C   GLY   167     -20.035  10.371  36.853  1.00 57.13      H    C
ATOM   7211  O   GLY   167     -21.137   9.865  36.640  1.00 57.48      H    O
ATOM   7212  N   ALA   168     -19.340  10.141  37.962  1.00 55.72      H    N
ATOM   7213  CA  ALA   168     -19.868   9.296  39.024  1.00 56.14      H    C
ATOM   7214  CB  ALA   168     -18.762   8.958  40.018  1.00 54.67      H    C
ATOM   7215  C   ALA   168     -21.030   9.980  39.746  1.00 56.76      H    C
ATOM   7216  O   ALA   168     -21.869   9.316  40.359  1.00 57.75      H    O
ATOM   7217  N   LEU   169     -21.073  11.308  39.676  1.00 55.50      H    N
ATOM   7218  CA  LEU   169     -22.129  12.076  40.325  1.00 53.11      H    C
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ATOM   7219  CB  LEU   169     -21.519  13.117  41.263  1.00 52.46      H    C
ATOM   7220  CG  LEU   169     -22.471  14.079  41.979  1.00 52.36      H    C
ATOM   7221  CD1 LEU   169     -23.459  13.291  42.831  1.00 50.70      H    C
ATOM   7222  CD2 LEU   169     -21.660  15.036  42.847  1.00 50.44      H    C
ATOM   7223  C   LEU   169     -22.989  12.761  39.273  1.00 52.77      H    C
ATOM   7224  O   LEU   169     -22.540  13.678  38.588  1.00 52.53      H    O
ATOM   7225  N   THR   170     -24.230  12.304  39.147  1.00 52.69      H    N
ATOM   7226  CA  THR   170     -25.126  12.796  38.110  1.00 52.29      H    C
ATOM   7227  CB  THR   170     -25.414  11.699  37.077  1.00 52.97      H    C
ATOM   7228  OG1 THR   170     -25.938  10.543  37.744  1.00 52.52      H    O
ATOM   7229  CG2 THR   170     -24.135  11.322  36.339  1.00 51.54      H    C
ATOM   7230  C   THR   170     -26.447  13.274  38.702  1.00 52.12      H    C
ATOM   7231  O   THR   170     -27.083  14.192  38.182  1.00 52.03      H    O
ATOM   7232  N   SER   171     -26.854  12.649  39.798  1.00 51.23      H    N
ATOM   7233  CA  SER   171     -28.080  13.042  40.469  1.00 50.24      H    C
ATOM   7234  CB  SER   171     -28.477  11.974  41.490  1.00 51.95      H    C
ATOM   7235  OG  SER   171     -29.732  12.268  42.075  1.00 55.96      H    O
ATOM   7236  C   SER   171     -27.898  14.392  41.164  1.00 48.92      H    C
ATOM   7237  O   SER   171     -26.913  14.607  41.879  1.00 48.18      H    O
ATOM   7238  N   GLY   172     -28.848  15.298  40.946  1.00 46.35      H    N
ATOM   7239  CA  GLY   172     -28.794  16.600  41.589  1.00 44.63      H    C
ATOM   7240  C   GLY   172     -27.951  17.617  40.839  1.00 43.58      H    C
ATOM   7241  O   GLY   172     -27.815  18.762  41.276  1.00 43.02      H    O
ATOM   7242  N   VAL   173     -27.381  17.206  39.711  1.00 41.66      H    N
ATOM   7243  CA  VAL   173     -26.556  18.099  38.907  1.00 40.61      H    C
ATOM   7244  CB  VAL   173     -25.533  17.313  38.052  1.00 40.49      H    C
ATOM   7245  CG1 VAL   173     -24.782  18.265  37.122  1.00 36.94      H    C
ATOM   7246  CG2 VAL   173     -24.556  16.584  38.959  1.00 38.36      H    C
ATOM   7247  C   VAL   173     -27.414  18.941  37.974  1.00 39.99      H    C
ATOM   7248  O   VAL   173     -28.250  18.415  37.240  1.00 39.43      H    O
ATOM   7249  N   HIS   174     -27.202  20.251  38.008  1.00 39.34      H    N
ATOM   7250  CA  HIS   174     -27.856  21.144  37.065  1.00 39.73      H    C
ATOM   7251  CB  HIS   174     -29.001  21.901  37.751  1.00 41.08      H    C
ATOM   7252  CG  HIS   174     -29.858  22.680  36.800  1.00 45.12      H    C
ATOM   7253  CD2 HIS   174     -29.788  22.828  35.455  1.00 46.87      H    C
ATOM   7254  ND1 HIS   174     -30.944  23.424  37.210  1.00 47.42      H    N
ATOM   7255  CE1 HIS   174     -31.506  23.997  36.159  1.00 46.85      H    C
ATOM   7256  NE2 HIS   174     -30.823  23.652  35.082  1.00 47.87      H    N
ATOM   7257  C   HIS   174     -26.850  22.135  36.485  1.00 38.58      H    C
ATOM   7258  O   HIS   174     -26.371  23.035  37.176  1.00 37.51      H    O
ATOM   7259  N   THR   175     -26.534  21.962  35.208  1.00 38.03      H    N
ATOM   7260  CA  THR   175     -25.664  22.893  34.507  1.00 36.61      H    C
ATOM   7261  CB  THR   175     -24.692  22.135  33.585  1.00 37.00      H    C
ATOM   7262  OG1 THR   175     -23.814  21.331  34.390  1.00 36.64      H    O
ATOM   7263  CG2 THR   175     -23.868  23.115  32.749  1.00 36.37      H    C
ATOM   7264  C   THR   175     -26.504  23.868  33.694  1.00 36.47      H    C
ATOM   7265  O   THR   175     -27.269  23.462  32.822  1.00 38.71      H    O
ATOM   7266  N   PHE   176     -26.370  25.155  33.994  1.00 34.80      H    N
ATOM   7267  CA  PHE   176     -27.245  26.165  33.416  1.00 33.49      H    C
ATOM   7268  CB  PHE   176     -27.366  27.370  34.350  1.00 29.26      H    C
ATOM   7269  CG  PHE   176     -28.218  27.117  35.554  1.00 29.36      H    C
ATOM   7270  CD1 PHE   176     -27.803  26.234  36.543  1.00 28.93      H    C
ATOM   7271  CD2 PHE   176     -29.437  27.761  35.701  1.00 26.76      H    C
ATOM   7272  CE1 PHE   176     -28.597  25.997  37.666  1.00 30.31      H    C
ATOM   7273  CE2 PHE   176     -30.233  27.532  36.814  1.00 28.16      H    C
ATOM   7274  CZ  PHE   176     -29.812  26.648  37.798  1.00 29.02      H    C
ATOM   7275  C   PHE   176     -26.734  26.636  32.068  1.00 34.89      H    C
ATOM   7276  O   PHE   176     -25.530  26.650  31.822  1.00 35.66      H    O
ATOM   7277  N   PRO   177     -27.652  27.033  31.175  1.00 35.42      H    N
ATOM   7278  CD  PRO   177     -29.113  26.855  31.270  1.00 34.38      H    C
ATOM   7279  CA  PRO   177     -27.251  27.589  29.881  1.00 35.34      H    C
ATOM   7280  CB  PRO   177     -28.583  27.873  29.182  1.00 34.43      H    C
ATOM   7281  CG  PRO   177     -29.548  26.907  29.830  1.00 35.56      H    C
ATOM   7282  C   PRO   177     -26.419  28.848  30.082  1.00 35.62      H    C
ATOM   7283  O   PRO   177     -26.689  29.640  30.986  1.00 37.58      H    O
ATOM   7284  N   ALA   178     -25.410  29.022  29.237  1.00 34.61      H    N
ATOM   7285  CA  ALA   178     -24.468  30.122  29.379  1.00 34.64      H    C
ATOM   7286  CB  ALA   178     -23.295  29.930  28.424  1.00 32.42      H    C
ATOM   7287  C   ALA   178     -25.129  31.466  29.121  1.00 34.20      H    C
ATOM   7288  O   ALA   178     -26.116  31.560  28.394  1.00 35.25      H    O
ATOM   7289  N   VAL   179     -24.583  32.507  29.734  1.00 33.24      H    N
ATOM   7290  CA  VAL   179     -24.940  33.864  29.372  1.00 34.36      H    C
ATOM   7291  CB  VAL   179     -24.935  34.784  30.613  1.00 35.45      H    C
ATOM   7292  CG1 VAL   179     -23.532  34.865  31.198  1.00 34.78      H    C
ATOM   7293  CG2 VAL   179     -25.460  36.158  30.246  1.00 33.91      H    C
ATOM   7294  C   VAL   179     -23.904  34.352  28.359  1.00 35.86      H    C
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ATOM	7295	O	VAL	179	-22.734	33.962	28.413	1.00	34.73	H	O
ATOM	7296	N	LEU	180	-24.336	35.180	27.416	1.00	39.05	H	N
ATOM	7297	CA	LEU	180	-23.402	35.795	26.476	1.00	41.77	H	C
ATOM	7298	CB	LEU	180	-23.998	35.815	25.065	1.00	41.69	H	C
ATOM	7299	CG	LEU	180	-23.180	36.524	23.982	1.00	43.45	H	C
ATOM	7300	CD1	LEU	180	-21.808	35.879	23.862	1.00	43.12	H	C
ATOM	7301	CD2	LEU	180	-23.925	36.450	22.655	1.00	42.68	H	C
ATOM	7302	C	LEU	180	-23.112	37.213	26.939	1.00	42.76	H	C
ATOM	7303	O	LEU	180	-24.023	38.026	27.071	1.00	44.73	H	O
ATOM	7304	N	GLN	181	-21.845	37.511	27.202	1.00	44.83	H	N
ATOM	7305	CA	GLN	181	-21.494	38.815	27.750	1.00	47.27	H	C
ATOM	7306	CB	GLN	181	-20.189	38.727	28.534	1.00	48.86	H	C
ATOM	7307	CG	GLN	181	-20.135	37.607	29.554	1.00	52.26	H	C
ATOM	7308	CD	GLN	181	-18.767	37.504	30.198	1.00	53.89	H	C
ATOM	7309	OE1	GLN	181	-18.275	38.467	30.794	1.00	56.33	H	O
ATOM	7310	NE2	GLN	181	-18.140	36.341	30.075	1.00	51.83	H	N
ATOM	7311	C	GLN	181	-21.339	39.857	26.648	1.00	47.64	H	C
ATOM	7312	O	GLN	181	-21.008	39.525	25.508	1.00	45.43	H	O
ATOM	7313	N	SER	182	-21.569	41.117	27.005	1.00	48.50	H	N
ATOM	7314	CA	SER	182	-21.284	42.241	26.117	1.00	50.22	H	C
ATOM	7315	CB	SER	182	-21.346	43.553	26.897	1.00	50.75	H	C
ATOM	7316	OG	SER	182	-22.606	43.704	27.526	1.00	55.71	H	O
ATOM	7317	C	SER	182	-19.910	42.110	25.468	1.00	49.58	H	C
ATOM	7318	O	SER	182	-19.711	42.528	24.327	1.00	50.47	H	O
ATOM	7319	N	SER	183	-18.964	41.531	26.198	1.00	47.76	H	N
ATOM	7320	CA	SER	183	-17.606	41.360	25.693	1.00	46.55	H	C
ATOM	7321	CB	SER	183	-16.691	40.844	26.803	1.00	46.41	H	C
ATOM	7322	OG	SER	183	-16.966	39.479	27.074	1.00	47.06	H	O
ATOM	7323	C	SER	183	-17.558	40.375	24.533	1.00	45.50	H	C
ATOM	7324	O	SER	183	-16.549	40.289	23.830	1.00	47.15	H	O
ATOM	7325	N	GLY	184	-18.634	39.610	24.354	1.00	43.61	H	N
ATOM	7326	CA	GLY	184	-18.630	38.554	23.354	1.00	41.62	H	C
ATOM	7327	C	GLY	184	-18.155	37.206	23.873	1.00	41.63	H	C
ATOM	7328	O	GLY	184	-18.108	36.225	23.127	1.00	42.12	H	O
ATOM	7329	N	LEU	185	-17.797	37.151	25.154	1.00	41.06	H	N
ATOM	7330	CA	LEU	185	-17.391	35.896	25.782	1.00	39.48	H	C
ATOM	7331	CB	LEU	185	-16.222	36.147	26.740	1.00	40.59	H	C
ATOM	7332	CG	LEU	185	-14.954	36.763	26.134	1.00	41.75	H	C
ATOM	7333	CD1	LEU	185	-13.943	37.034	27.238	1.00	41.08	H	C
ATOM	7334	CD2	LEU	185	-14.363	35.829	25.088	1.00	40.63	H	C
ATOM	7335	C	LEU	185	-18.566	35.270	26.541	1.00	37.17	H	C
ATOM	7336	O	LEU	185	-19.534	35.956	26.870	1.00	36.34	H	O
ATOM	7337	N	TYR	186	-18.479	33.969	26.811	1.00	35.21	H	N
ATOM	7338	CA	TYR	186	-19.544	33.257	27.520	1.00	35.82	H	C
ATOM	7339	CB	TYR	186	-19.905	31.958	26.790	1.00	35.22	H	C
ATOM	7340	CG	TYR	186	-20.484	32.132	25.400	1.00	38.74	H	C
ATOM	7341	CD1	TYR	186	-21.859	32.213	25.201	1.00	39.50	H	C
ATOM	7342	CE1	TYR	186	-22.393	32.334	23.930	1.00	41.29	H	C
ATOM	7343	CD2	TYR	186	-19.658	32.181	24.286	1.00	37.63	H	C
ATOM	7344	CE2	TYR	186	-20.178	32.304	23.018	1.00	40.69	H	C
ATOM	7345	CZ	TYR	186	-21.545	32.378	22.840	1.00	43.16	H	C
ATOM	7346	OH	TYR	186	-22.060	32.482	21.565	1.00	45.56	H	O
ATOM	7347	C	TYR	186	-19.137	32.901	28.956	1.00	35.42	H	C
ATOM	7348	O	TYR	186	-17.962	32.669	29.233	1.00	36.05	H	O
ATOM	7349	N	SER	187	-20.118	32.841	29.854	1.00	33.07	H	N
ATOM	7350	CA	SER	187	-19.939	32.219	31.166	1.00	33.69	H	C
ATOM	7351	CB	SER	187	-19.760	33.293	32.249	1.00	30.64	H	C
ATOM	7352	OG	SER	187	-18.614	34.090	31.992	1.00	31.70	H	O
ATOM	7353	C	SER	187	-21.157	31.362	31.508	1.00	33.84	H	C
ATOM	7354	O	SER	187	-22.288	31.709	31.153	1.00	33.92	H	O
ATOM	7355	N	LEU	188	-20.932	30.247	32.198	1.00	33.13	H	N
ATOM	7356	CA	LEU	188	-22.041	29.488	32.762	1.00	32.13	H	C
ATOM	7357	CB	LEU	188	-22.372	28.284	31.880	1.00	30.17	H	C
ATOM	7358	CG	LEU	188	-21.331	27.175	31.701	1.00	32.49	H	C
ATOM	7359	CD1	LEU	188	-21.234	26.317	32.963	1.00	30.00	H	C
ATOM	7360	CD2	LEU	188	-21.747	26.310	30.518	1.00	29.79	H	C
ATOM	7361	C	LEU	188	-21.753	29.023	34.183	1.00	33.34	H	C
ATOM	7362	O	LEU	188	-20.650	29.200	34.700	1.00	33.47	H	O
ATOM	7363	N	SER	189	-22.758	28.430	34.814	1.00	32.89	H	N
ATOM	7364	CA	SER	189	-22.580	27.833	36.125	1.00	32.77	H	C
ATOM	7365	CB	SER	189	-23.270	28.675	37.201	1.00	31.98	H	C
ATOM	7366	OG	SER	189	-22.656	29.947	37.313	1.00	33.26	H	O
ATOM	7367	C	SER	189	-23.159	26.435	36.123	1.00	33.45	H	C
ATOM	7368	O	SER	189	-24.163	26.164	35.458	1.00	32.42	H	O
ATOM	7369	N	SER	190	-22.502	25.546	36.856	1.00	34.16	H	N
ATOM	7370	CA	SER	190	-23.029	24.220	37.108	1.00	34.97	H	C

ATOM	7371	CB	SER	190	-22.098	23.157	36.521	1.00	35.56	H	C
ATOM	7372	OG	SER	190	-22.601	21.852	36.764	1.00	36.81	H	O
ATOM	7373	C	SER	190	-23.130	24.049	38.617	1.00	36.41	H	C
ATOM	7374	O	SER	190	-22.185	24.356	39.350	1.00	35.33	H	O
ATOM	7375	N	VAL	191	-24.281	23.571	39.075	1.00	36.33	H	N
ATOM	7376	CA	VAL	191	-24.522	23.382	40.495	1.00	38.43	H	C
ATOM	7377	CB	VAL	191	-25.583	24.369	41.013	1.00	39.52	H	C
ATOM	7378	CG1	VAL	191	-25.902	24.085	42.471	1.00	41.66	H	C
ATOM	7379	CG2	VAL	191	-25.066	25.774	40.876	1.00	41.62	H	C
ATOM	7380	C	VAL	191	-24.998	21.968	40.761	1.00	39.28	H	C
ATOM	7381	O	VAL	191	-25.663	21.358	39.927	1.00	40.77	H	O
ATOM	7382	N	VAL	192	-24.647	21.437	41.924	1.00	39.29	H	N
ATOM	7383	CA	VAL	192	-25.145	20.134	42.316	1.00	38.27	H	C
ATOM	7384	CB	VAL	192	-24.027	19.066	42.249	1.00	37.49	H	C
ATOM	7385	CG1	VAL	192	-22.875	19.462	43.149	1.00	39.66	H	C
ATOM	7386	CG2	VAL	192	-24.579	17.708	42.650	1.00	38.15	H	C
ATOM	7387	C	VAL	192	-25.700	20.223	43.724	1.00	37.59	H	C
ATOM	7388	O	VAL	192	-25.123	20.882	44.587	1.00	35.77	H	O
ATOM	7389	N	THR	193	-26.838	19.576	43.944	1.00	39.03	H	N
ATOM	7390	CA	THR	193	-27.465	19.546	45.264	1.00	40.19	H	C
ATOM	7391	CB	THR	193	-29.000	19.651	45.142	1.00	42.63	H	C
ATOM	7392	OG1	THR	193	-29.342	20.941	44.618	1.00	45.54	H	O
ATOM	7393	CG2	THR	193	-29.675	19.459	46.504	1.00	41.23	H	C
ATOM	7394	C	THR	193	-27.102	18.246	45.967	1.00	38.72	H	C
ATOM	7395	O	THR	193	-27.343	17.163	45.438	1.00	38.35	H	O
ATOM	7396	N	VAL	194	-26.508	18.357	47.150	1.00	38.96	H	N
ATOM	7397	CA	VAL	194	-25.998	17.183	47.862	1.00	40.70	H	C
ATOM	7398	CB	VAL	194	-24.452	17.105	47.801	1.00	38.53	H	C
ATOM	7399	CG1	VAL	194	-23.986	17.097	46.362	1.00	39.05	H	C
ATOM	7400	CG2	VAL	194	-23.841	18.271	48.566	1.00	34.97	H	C
ATOM	7401	C	VAL	194	-26.402	17.197	49.333	1.00	42.41	H	C
ATOM	7402	O	VAL	194	-26.782	18.239	49.876	1.00	42.66	H	O
ATOM	7403	N	PRO	195	-26.315	16.035	50.003	1.00	44.22	H	N
ATOM	7404	CD	PRO	195	-26.009	14.700	49.463	1.00	45.72	H	C
ATOM	7405	CA	PRO	195	-26.603	15.989	51.439	1.00	46.23	H	C
ATOM	7406	CB	PRO	195	-26.475	14.506	51.786	1.00	47.19	H	C
ATOM	7407	CG	PRO	195	-26.632	13.788	50.476	1.00	47.45	H	C
ATOM	7408	C	PRO	195	-25.585	16.838	52.191	1.00	47.52	H	C
ATOM	7409	O	PRO	195	-24.381	16.671	52.005	1.00	48.34	H	O
ATOM	7410	N	SER	196	-26.054	17.751	53.031	1.00	47.83	H	N
ATOM	7411	CA	SER	196	-25.130	18.582	53.787	1.00	52.32	H	C
ATOM	7412	CB	SER	196	-25.879	19.705	54.514	1.00	52.90	H	C
ATOM	7413	OG	SER	196	-26.802	19.189	55.450	1.00	57.28	H	O
ATOM	7414	C	SER	196	-24.354	17.737	54.789	1.00	53.77	H	C
ATOM	7415	O	SER	196	-23.330	18.170	55.317	1.00	54.68	H	O
ATOM	7416	N	SER	197	-24.838	16.526	55.045	1.00	55.89	H	N
ATOM	7417	CA	SER	197	-24.154	15.615	55.957	1.00	58.39	H	C
ATOM	7418	CB	SER	197	-25.098	14.489	56.397	1.00	57.25	H	C
ATOM	7419	OG	SER	197	-25.329	13.570	55.345	1.00	56.57	H	O
ATOM	7420	C	SER	197	-22.912	15.020	55.292	1.00	59.35	H	C
ATOM	7421	O	SER	197	-21.974	14.607	55.970	1.00	59.77	H	O
ATOM	7422	N	SER	198	-22.909	14.984	53.963	1.00	60.41	H	N
ATOM	7423	CA	SER	198	-21.781	14.441	53.213	1.00	60.89	H	C
ATOM	7424	CB	SER	198	-22.231	14.008	51.818	1.00	59.87	H	C
ATOM	7425	OG	SER	198	-22.374	15.135	50.967	1.00	60.91	H	O
ATOM	7426	C	SER	198	-20.659	15.470	53.080	1.00	61.53	H	C
ATOM	7427	O	SER	198	-19.515	15.116	52.807	1.00	62.27	H	O
ATOM	7428	N	LEU	199	-20.989	16.744	53.264	1.00	62.42	H	N
ATOM	7429	CA	LEU	199	-19.986	17.799	53.170	1.00	63.79	H	C
ATOM	7430	CB	LEU	199	-20.591	19.164	53.518	1.00	60.27	H	C
ATOM	7431	CG	LEU	199	-21.688	19.724	52.607	1.00	58.84	H	C
ATOM	7432	CD1	LEU	199	-22.169	21.058	53.158	1.00	56.44	H	C
ATOM	7433	CD2	LEU	199	-21.159	19.886	51.190	1.00	56.85	H	C
ATOM	7434	C	LEU	199	-18.859	17.490	54.142	1.00	66.35	H	C
ATOM	7435	O	LEU	199	-19.092	17.296	55.337	1.00	68.30	H	O
ATOM	7436	N	GLY	200	-17.635	17.437	53.634	1.00	67.32	H	N
ATOM	7437	CA	GLY	200	-16.505	17.234	54.519	1.00	69.17	H	C
ATOM	7438	C	GLY	200	-16.023	15.799	54.633	1.00	68.88	H	C
ATOM	7439	O	GLY	200	-14.974	15.556	55.224	1.00	70.04	H	O
ATOM	7440	N	THR	201	-16.771	14.846	54.083	1.00	67.65	H	N
ATOM	7441	CA	THR	201	-16.241	13.493	53.930	1.00	67.09	H	C
ATOM	7442	CB	THR	201	-17.079	12.444	54.702	1.00	67.94	H	C
ATOM	7443	OG1	THR	201	-18.284	12.155	53.981	1.00	69.01	H	O
ATOM	7444	CG2	THR	201	-17.430	12.967	56.094	1.00	67.66	H	C
ATOM	7445	C	THR	201	-16.217	13.108	52.456	1.00	65.62	H	C
ATOM	7446	O	THR	201	-15.265	12.486	51.984	1.00	66.99	H	O

ATOM	7447	N	GLN	202	-17.265	13.482	51.731	1.00	63.03	H	N
ATOM	7448	CA	GLN	202	-17.288	13.296	50.286	1.00	60.90	H	C
ATOM	7449	CB	GLN	202	-18.726	13.167	49.795	1.00	61.55	H	C
ATOM	7450	CG	GLN	202	-18.853	13.129	48.289	1.00	64.43	H	C
ATOM	7451	CD	GLN	202	-18.191	11.913	47.677	1.00	66.51	H	C
ATOM	7452	OE1	GLN	202	-18.749	10.814	47.694	1.00	67.79	H	O
ATOM	7453	NE2	GLN	202	-16.994	12.103	47.129	1.00	66.84	H	N
ATOM	7454	C	GLN	202	-16.617	14.487	49.607	1.00	58.78	H	C
ATOM	7455	O	GLN	202	-16.892	15.641	49.936	1.00	58.19	H	O
ATOM	7456	N	THR	203	-15.725	14.214	48.666	1.00	55.82	H	N
ATOM	7457	CA	THR	203	-15.092	15.299	47.934	1.00	53.36	H	C
ATOM	7458	CB	THR	203	-13.615	14.991	47.617	1.00	54.58	H	C
ATOM	7459	OG1	THR	203	-13.537	13.811	46.810	1.00	55.09	H	O
ATOM	7460	CG2	THR	203	-12.826	14.789	48.903	1.00	54.39	H	C
ATOM	7461	C	THR	203	-15.838	15.553	46.631	1.00	49.49	H	C
ATOM	7462	O	THR	203	-16.299	14.617	45.965	1.00	47.29	H	O
ATOM	7463	N	TYR	204	-15.962	16.827	46.278	1.00	45.01	H	N
ATOM	7464	CA	TYR	204	-16.675	17.202	45.068	1.00	42.84	H	C
ATOM	7465	CB	TYR	204	-17.884	18.070	45.427	1.00	40.12	H	C
ATOM	7466	CG	TYR	204	-18.919	17.314	46.224	1.00	38.49	H	C
ATOM	7467	CD1	TYR	204	-19.065	17.527	47.590	1.00	38.48	H	C
ATOM	7468	CE1	TYR	204	-19.994	16.806	48.330	1.00	38.92	H	C
ATOM	7469	CD2	TYR	204	-19.731	16.362	45.615	1.00	38.50	H	C
ATOM	7470	CE2	TYR	204	-20.659	15.639	46.343	1.00	38.51	H	C
ATOM	7471	CZ	TYR	204	-20.785	15.866	47.699	1.00	38.77	H	C
ATOM	7472	OH	TYR	204	-21.706	15.148	48.425	1.00	41.78	H	O
ATOM	7473	C	TYR	204	-15.762	17.924	44.097	1.00	41.23	H	C
ATOM	7474	O	TYR	204	-15.124	18.925	44.436	1.00	40.31	H	O
ATOM	7475	N	ILE	205	-15.694	17.395	42.885	1.00	41.27	H	N
ATOM	7476	CA	ILE	205	-14.812	17.944	41.868	1.00	41.45	H	C
ATOM	7477	CB	ILE	205	-13.640	16.985	41.577	1.00	42.17	H	C
ATOM	7478	CG2	ILE	205	-12.732	17.578	40.499	1.00	40.04	H	C
ATOM	7479	CG1	ILE	205	-12.850	16.734	42.865	1.00	41.38	H	C
ATOM	7480	CD1	ILE	205	-11.695	15.767	42.693	1.00	41.84	H	C
ATOM	7481	C	ILE	205	-15.601	18.158	40.591	1.00	41.22	H	C
ATOM	7482	O	ILE	205	-16.240	17.236	40.083	1.00	41.08	H	O
ATOM	7483	N	CYS	206	-15.563	19.373	40.067	1.00	40.41	H	N
ATOM	7484	CA	CYS	206	-16.252	19.629	38.819	1.00	42.57	H	C
ATOM	7485	C	CYS	206	-15.242	19.546	37.667	1.00	42.00	H	C
ATOM	7486	O	CYS	206	-14.135	20.079	37.752	1.00	41.39	H	O
ATOM	7487	CB	CYS	206	-16.974	20.992	38.895	1.00	45.38	H	C
ATOM	7488	SG	CYS	206	-16.108	22.456	38.247	1.00	54.25	H	S
ATOM	7489	N	ASN	207	-15.613	18.832	36.609	1.00	40.73	H	N
ATOM	7490	CA	ASN	207	-14.714	18.599	35.482	1.00	40.35	H	C
ATOM	7491	CB	ASN	207	-14.680	17.109	35.124	1.00	39.81	H	C
ATOM	7492	CG	ASN	207	-14.565	16.216	36.350	1.00	42.88	H	C
ATOM	7493	OD1	ASN	207	-15.521	15.533	36.725	1.00	42.86	H	O
ATOM	7494	ND2	ASN	207	-13.392	16.217	36.981	1.00	40.06	H	N
ATOM	7495	C	ASN	207	-15.198	19.398	34.281	1.00	39.79	H	C
ATOM	7496	O	ASN	207	-16.219	19.070	33.677	1.00	39.54	H	O
ATOM	7497	N	VAL	208	-14.456	20.447	33.941	1.00	38.89	H	N
ATOM	7498	CA	VAL	208	-14.853	21.353	32.875	1.00	39.31	H	C
ATOM	7499	CB	VAL	208	-14.612	22.825	33.288	1.00	39.03	H	C
ATOM	7500	CG1	VAL	208	-14.979	23.761	32.147	1.00	36.52	H	C
ATOM	7501	CG2	VAL	208	-15.432	23.154	34.533	1.00	36.09	H	C
ATOM	7502	C	VAL	208	-14.069	21.061	31.604	1.00	41.22	H	C
ATOM	7503	O	VAL	208	-12.839	21.053	31.611	1.00	43.41	H	O
ATOM	7504	N	ASN	209	-14.782	20.821	30.511	1.00	43.06	H	N
ATOM	7505	CA	ASN	209	-14.136	20.546	29.234	1.00	44.34	H	C
ATOM	7506	CB	ASN	209	-14.500	19.136	28.756	1.00	47.58	H	C
ATOM	7507	CG	ASN	209	-13.650	18.677	27.578	1.00	54.59	H	C
ATOM	7508	OD1	ASN	209	-12.994	19.486	26.913	1.00	57.77	H	O
ATOM	7509	ND2	ASN	209	-13.657	17.372	27.316	1.00	55.14	H	N
ATOM	7510	C	ASN	209	-14.556	21.583	28.196	1.00	43.67	H	C
ATOM	7511	O	ASN	209	-15.745	21.776	27.942	1.00	44.34	H	O
ATOM	7512	N	HIS	210	-13.573	22.261	27.612	1.00	42.73	H	N
ATOM	7513	CA	HIS	210	-13.823	23.227	26.548	1.00	42.37	H	C
ATOM	7514	CB	HIS	210	-13.448	24.636	27.019	1.00	41.38	H	C
ATOM	7515	CG	HIS	210	-13.788	25.717	26.040	1.00	40.95	H	C
ATOM	7516	CD2	HIS	210	-14.971	26.086	25.494	1.00	40.98	H	C
ATOM	7517	ND1	HIS	210	-12.845	26.584	25.529	1.00	42.03	H	N
ATOM	7518	CE1	HIS	210	-13.432	27.442	24.712	1.00	40.17	H	C
ATOM	7519	NE2	HIS	210	-14.722	27.161	24.673	1.00	41.17	H	N
ATOM	7520	C	HIS	210	-12.987	22.842	25.331	1.00	43.48	H	C
ATOM	7521	O	HIS	210	-11.847	23.286	25.185	1.00	43.46	H	O
ATOM	7522	N	LYS	211	-13.558	22.018	24.455	1.00	44.53	H	N

ATOM	7523	CA	LYS	211	-12.811	21.468	23.328	1.00	45.35	H	C
ATOM	7524	CB	LYS	211	-13.644	20.393	22.623	1.00	48.43	H	C
ATOM	7525	CG	LYS	211	-13.903	19.179	23.508	1.00	54.24	H	C
ATOM	7526	CD	LYS	211	-14.558	18.028	22.751	1.00	59.93	H	C
ATOM	7527	CE	LYS	211	-14.674	16.781	23.638	1.00	63.06	H	C
ATOM	7528	NZ	LYS	211	-15.144	15.575	22.888	1.00	64.57	H	N
ATOM	7529	C	LYS	211	-12.313	22.501	22.317	1.00	41.93	H	C
ATOM	7530	O	LYS	211	-11.200	22.387	21.816	1.00	43.23	H	O
ATOM	7531	N	PRO	212	-13.113	23.534	22.020	1.00	40.22	H	N
ATOM	7532	CD	PRO	212	-14.467	23.852	22.506	1.00	38.83	H	C
ATOM	7533	CA	PRO	212	-12.628	24.526	21.052	1.00	41.43	H	C
ATOM	7534	CB	PRO	212	-13.702	25.618	21.083	1.00	39.54	H	C
ATOM	7535	CG	PRO	212	-14.939	24.906	21.540	1.00	37.50	H	C
ATOM	7536	C	PRO	212	-11.229	25.079	21.373	1.00	44.16	H	C
ATOM	7537	O	PRO	212	-10.457	25.394	20.464	1.00	46.27	H	O
ATOM	7538	N	SER	213	-10.903	25.187	22.661	1.00	44.31	H	N
ATOM	7539	CA	SER	213	-9.593	25.691	23.077	1.00	43.30	H	C
ATOM	7540	CB	SER	213	-9.751	26.781	24.139	1.00	43.36	H	C
ATOM	7541	OG	SER	213	-10.185	26.231	25.375	1.00	42.70	H	O
ATOM	7542	C	SER	213	-8.690	24.594	23.630	1.00	43.68	H	C
ATOM	7543	O	SER	213	-7.572	24.870	24.062	1.00	44.07	H	O
ATOM	7544	N	ASN	214	-9.172	23.357	23.630	1.00	43.44	H	N
ATOM	7545	CA	ASN	214	-8.372	22.234	24.110	1.00	46.08	H	C
ATOM	7546	CB	ASN	214	-7.097	22.093	23.272	1.00	48.48	H	C
ATOM	7547	CG	ASN	214	-7.388	21.690	21.832	1.00	52.65	H	C
ATOM	7548	OD1	ASN	214	-7.140	22.457	20.895	1.00	52.37	H	O
ATOM	7549	ND2	ASN	214	-7.919	20.483	21.652	1.00	52.33	H	N
ATOM	7550	C	ASN	214	-7.999	22.388	25.584	1.00	46.19	H	C
ATOM	7551	O	ASN	214	-6.891	22.046	25.996	1.00	45.93	H	O
ATOM	7552	N	THR	215	-8.935	22.904	26.372	1.00	45.35	H	N
ATOM	7553	CA	THR	215	-8.716	23.108	27.794	1.00	44.99	H	C
ATOM	7554	CB	THR	215	-9.062	24.553	28.198	1.00	44.21	H	C
ATOM	7555	OG1	THR	215	-8.385	25.468	27.329	1.00	44.83	H	O
ATOM	7556	CG2	THR	215	-8.635	24.822	29.632	1.00	43.77	H	C
ATOM	7557	C	THR	215	-9.599	22.162	28.608	1.00	45.50	H	C
ATOM	7558	O	THR	215	-10.815	22.122	28.414	1.00	45.25	H	O
ATOM	7559	N	LYS	216	-8.985	21.402	29.511	1.00	44.26	H	N
ATOM	7560	CA	LYS	216	-9.725	20.736	30.577	1.00	45.60	H	C
ATOM	7561	CB	LYS	216	-9.439	19.234	30.595	1.00	47.96	H	C
ATOM	7562	CG	LYS	216	-10.062	18.437	29.460	1.00	52.62	H	C
ATOM	7563	CD	LYS	216	-9.851	16.937	29.685	1.00	55.74	H	C
ATOM	7564	CE	LYS	216	-10.309	16.114	28.487	1.00	58.57	H	C
ATOM	7565	NZ	LYS	216	-9.548	16.453	27.249	1.00	60.46	H	N
ATOM	7566	C	LYS	216	-9.311	21.332	31.913	1.00	44.05	H	C
ATOM	7567	O	LYS	216	-8.132	21.579	32.144	1.00	43.16	H	O
ATOM	7568	N	VAL	217	-10.282	21.562	32.790	1.00	43.83	H	N
ATOM	7569	CA	VAL	217	-9.998	22.049	34.134	1.00	42.88	H	C
ATOM	7570	CB	VAL	217	-10.428	23.517	34.297	1.00	42.10	H	C
ATOM	7571	CG1	VAL	217	-10.096	24.003	35.702	1.00	40.43	H	C
ATOM	7572	CG2	VAL	217	-9.743	24.379	33.250	1.00	41.13	H	C
ATOM	7573	C	VAL	217	-10.734	21.216	35.178	1.00	44.48	H	C
ATOM	7574	O	VAL	217	-11.927	20.941	35.034	1.00	44.28	H	O
ATOM	7575	N	ASP	218	-10.021	20.812	36.224	1.00	45.43	H	N
ATOM	7576	CA	ASP	218	-10.647	20.153	37.368	1.00	46.54	H	C
ATOM	7577	CB	ASP	218	-9.980	18.810	37.663	1.00	49.28	H	C
ATOM	7578	CG	ASP	218	-10.346	17.743	36.657	1.00	54.06	H	C
ATOM	7579	OD1	ASP	218	-11.245	17.982	35.822	1.00	56.26	H	O
ATOM	7580	OD2	ASP	218	-9.732	16.658	36.701	1.00	59.11	H	O
ATOM	7581	C	ASP	218	-10.534	21.038	38.593	1.00	45.42	H	C
ATOM	7582	O	ASP	218	-9.450	21.515	38.925	1.00	45.41	H	O
ATOM	7583	N	LYS	219	-11.658	21.254	39.265	1.00	43.94	H	N
ATOM	7584	CA	LYS	219	-11.679	22.099	40.444	1.00	43.70	H	C
ATOM	7585	CB	LYS	219	-12.358	23.429	40.119	1.00	43.41	H	C
ATOM	7586	CG	LYS	219	-12.481	24.361	41.302	1.00	45.72	H	C
ATOM	7587	CD	LYS	219	-11.136	24.958	41.689	1.00	46.20	H	C
ATOM	7588	CE	LYS	219	-10.569	25.794	40.560	1.00	45.39	H	C
ATOM	7589	NZ	LYS	219	-9.622	26.809	41.087	1.00	48.37	H	N
ATOM	7590	C	LYS	219	-12.416	21.400	41.578	1.00	44.16	H	C
ATOM	7591	O	LYS	219	-13.581	21.035	41.442	1.00	44.32	H	O
ATOM	7592	N	LYS	220	-11.728	21.210	42.697	1.00	44.00	H	N
ATOM	7593	CA	LYS	220	-12.356	20.635	43.875	1.00	45.01	H	C
ATOM	7594	CB	LYS	220	-11.294	20.017	44.794	1.00	48.33	H	C
ATOM	7595	CG	LYS	220	-11.843	19.277	46.009	1.00	51.01	H	C
ATOM	7596	CD	LYS	220	-10.696	18.744	46.869	1.00	57.34	H	C
ATOM	7597	CE	LYS	220	-11.185	17.829	47.990	1.00	60.75	H	C
ATOM	7598	NZ	LYS	220	-11.920	18.562	49.066	1.00	62.49	H	N

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ATOM   7599  C   LYS   220     -13.092  21.748  44.601  1.00 43.21      H    C
ATOM   7600  O   LYS   220     -12.560  22.846  44.779  1.00 40.91      H    O
ATOM   7601  N   VAL   221     -14.324  21.468  45.007  1.00 42.53      H    N
ATOM   7602  CA  VAL   221     -15.142  22.475  45.666  1.00 43.36      H    C
ATOM   7603  CB  VAL   221     -16.521  22.606  44.975  1.00 40.89      H    C
ATOM   7604  CG1 VAL   221     -17.341  23.702  45.641  1.00 37.25      H    C
ATOM   7605  CG2 VAL   221     -16.330  22.905  43.489  1.00 37.55      H    C
ATOM   7606  C   VAL   221     -15.336  22.092  47.126  1.00 45.76      H    C
ATOM   7607  O   VAL   221     -15.936  21.064  47.428  1.00 45.44      H    O
ATOM   7608  N   GLU   222     -14.814  22.919  48.025  1.00 49.29      H    N
ATOM   7609  CA  GLU   222     -14.822  22.613  49.455  1.00 53.13      H    C
ATOM   7610  CB  GLU   222     -13.394  22.573  50.004  1.00 54.80      H    C
ATOM   7611  CG  GLU   222     -12.501  21.504  49.408  1.00 59.95      H    C
ATOM   7612  CD  GLU   222     -11.109  21.507  50.028  1.00 63.23      H    C
ATOM   7613  OE1 GLU   222     -10.566  20.411  50.289  1.00 65.91      H    O
ATOM   7614  OE2 GLU   222     -10.556  22.607  50.256  1.00 63.80      H    O
ATOM   7615  C   GLU   222     -15.609  23.656  50.234  1.00 53.98      H    C
ATOM   7616  O   GLU   222     -15.745  24.798  49.798  1.00 52.85      H    O
ATOM   7617  N   PRO   223     -16.124  23.271  51.412  1.00 55.55      H    N
ATOM   7618  CD  PRO   223     -16.157  21.876  51.886  1.00 55.58      H    C
ATOM   7619  CA  PRO   223     -16.809  24.179  52.339  1.00 57.83      H    C
ATOM   7620  CB  PRO   223     -17.228  23.267  53.492  1.00 57.45      H    C
ATOM   7621  CG  PRO   223     -17.264  21.894  52.896  1.00 56.88      H    C
ATOM   7622  C   PRO   223     -15.892  25.306  52.807  1.00 61.01      H    C
ATOM   7623  O   PRO   223     -14.674  25.152  52.821  1.00 61.88      H    O
ATOM   7624  N   LYS   224     -16.481  26.434  53.189  1.00 64.76      H    N
ATOM   7625  CA  LYS   224     -15.710  27.608  53.598  1.00 68.89      H    C
ATOM   7626  CB  LYS   224     -16.608  28.848  53.602  1.00 71.49      H    C
ATOM   7627  CG  LYS   224     -17.358  29.095  52.302  1.00 74.50      H    C
ATOM   7628  CD  LYS   224     -18.487  30.095  52.518  1.00 76.86      H    C
ATOM   7629  CE  LYS   224     -19.142  30.504  51.212  1.00 77.87      H    C
ATOM   7630  NZ  LYS   224     -20.308  31.401  51.451  1.00 78.94      H    N
ATOM   7631  C   LYS   224     -15.090  27.431  54.988  1.00 69.98      H    C
ATOM   7632  O   LYS   224     -13.862  27.636  55.125  1.00 70.34      H    O
ATOM   7633  OXT LYS   224     -15.848  27.105  55.928  1.00 70.58      H    O
TER    7634       LYS   224                                             H
ATOM   8057  NA  NA      1     -48.879  -0.173 -21.279  1.00 64.24      ION  N
TER    8058       NA      1                                             ION
END
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Table 35.2

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ATOM      1  CB  THR    61      10.449 -40.746 -18.654  1.00 36.37      A    C
ATOM      2  OG1 THR    61      10.788 -42.078 -18.244  1.00 39.29      A    O
ATOM      3  CG2 THR    61      11.631 -39.827 -18.376  1.00 36.88      A    C
ATOM      4  C   THR    61       9.503 -39.926 -16.424  1.00 32.74      A    C
ATOM      5  O   THR    61      10.188 -38.932 -16.133  1.00 32.55      A    O
ATOM      6  N   THR    61       8.558 -39.083 -18.582  1.00 33.91      A    N
ATOM      7  CA  THR    61       9.165 -40.263 -17.892  1.00 34.36      A    C
ATOM      8  N   ALA    62       9.017 -40.768 -15.509  1.00 30.00      A    N
ATOM      9  CA  ALA    62       8.977 -40.452 -14.074  1.00 26.49      A    C
ATOM     10  CB  ALA    62       8.158 -41.501 -13.337  1.00 24.81      A    C
ATOM     11  C   ALA    62      10.345 -40.330 -13.425  1.00 24.06      A    C
ATOM     12  O   ALA    62      11.301 -40.970 -13.849  1.00 26.36      A    O
ATOM     13  N   THR    63      10.427 -39.513 -12.381  1.00 21.77      A    N
ATOM     14  CA  THR    63      11.687 -39.264 -11.691  1.00 18.83      A    C
ATOM     15  CB  THR    63      12.049 -37.757 -11.731  1.00 17.84      A    C
ATOM     16  OG1 THR    63      11.064 -37.000 -11.029  1.00 19.65      A    O
ATOM     17  CG2 THR    63      12.086 -37.256 -13.151  1.00 17.35      A    C
ATOM     18  C   THR    63      11.667 -39.741 -10.234  1.00 17.55      A    C
ATOM     19  O   THR    63      10.611 -39.991  -9.663  1.00 17.43      A    O
ATOM     20  N   PHE    64      12.851 -39.886  -9.649  1.00 18.91      A    N
ATOM     21  CA  PHE    64      12.987 -40.230  -8.239  1.00 18.70      A    C
ATOM     22  CB  PHE    64      13.904 -41.433  -8.066  1.00 18.53      A    C
ATOM     23  CG  PHE    64      14.182 -41.779  -6.631  1.00 19.76      A    C
ATOM     24  CD1 PHE    64      13.146 -42.007  -5.745  1.00 21.07      A    C
ATOM     25  CD2 PHE    64      15.479 -41.893  -6.169  1.00 20.97      A    C
ATOM     26  CE1 PHE    64      13.405 -42.353  -4.418  1.00 22.93      A    C
ATOM     27  CE2 PHE    64      15.745 -42.237  -4.847  1.00 20.76      A    C
ATOM     28  CZ  PHE    64      14.712 -42.465  -3.972  1.00 20.85      A    C
ATOM     29  C   PHE    64      13.562 -39.062  -7.457  1.00 19.32      A    C
ATOM     30  O   PHE    64      14.475 -38.380  -7.932  1.00 19.55      A    O
ATOM     31  N   HIS    65      13.028 -38.846  -6.256  1.00 19.72      A    N
ATOM     32  CA  HIS    65      13.445 -37.744  -5.395  1.00 18.95      A    C
ATOM     33  CB  HIS    65      12.394 -36.638  -5.417  1.00 17.76      A    C
ATOM     34  CG  HIS    65      12.152 -36.074  -6.780  1.00 19.55      A    C
ATOM     35  CD2 HIS    65      11.341 -36.481  -7.783  1.00 20.70      A    C
ATOM     36  ND1 HIS    65      12.813 -34.962  -7.253  1.00 20.16      A    N
ATOM     37  CE1 HIS    65      12.420 -34.709  -8.488  1.00 17.64      A    C
ATOM     38  NE2 HIS    65      11.527 -35.616  -8.834  1.00 17.20      A    N
ATOM     39  C   HIS    65      13.682 -38.196  -3.959  1.00 19.09      A    C
ATOM     40  O   HIS    65      13.039 -39.123  -3.468  1.00 18.05      A    O
ATOM     41  N   ARG    66      14.608 -37.519  -3.289  1.00 19.61      A    N
ATOM     42  CA  ARG    66      15.107 -37.964  -2.000  1.00 20.80      A    C
ATOM     43  CB  ARG    66      16.306 -38.873  -2.238  1.00 20.79      A    C
ATOM     44  CG  ARG    66      16.797 -39.615  -1.039  1.00 23.33      A    C
ATOM     45  CD  ARG    66      18.313 -39.719  -1.112  1.00 25.65      A    C
ATOM     46  NE  ARG    66      18.769 -41.038  -1.533  1.00 25.62      A    N
ATOM     47  CZ  ARG    66      20.031 -41.338  -1.827  1.00 24.86      A    C
ATOM     48  NH1 ARG    66      20.346 -42.573  -2.195  1.00 24.37      A    N
ATOM     49  NH2 ARG    66      20.974 -40.408  -1.760  1.00 23.60      A    N
ATOM     50  C   ARG    66      15.496 -36.737  -1.172  1.00 22.22      A    C
ATOM     51  O   ARG    66      15.836 -35.695  -1.727  1.00 21.06      A    O
ATOM     52  N   CYS    67      15.429 -36.852   0.152  1.00 24.84      A    N
ATOM     53  CA  CYS    67      15.637 -35.694   1.022  1.00 26.62      A    C
ATOM     54  CB  CYS    67      15.124 -35.966   2.437  1.00 26.30      A    C
ATOM     55  SG  CYS    67      15.480 -34.603   3.602  1.00 29.02      A    S
ATOM     56  C   CYS    67      17.105 -35.321   1.107  1.00 28.15      A    C
ATOM     57  O   CYS    67      17.951 -36.170   1.412  1.00 29.15      A    O
ATOM     58  N   ALA    68      17.404 -34.045   0.863  1.00 28.74      A    N
ATOM     59  CA  ALA    68      18.786 -33.593   0.787  1.00 28.43      A    C
ATOM     60  CB  ALA    68      18.856 -32.228   0.139  1.00 27.23      A    C
ATOM     61  C   ALA    68      19.438 -33.564   2.162  1.00 28.95      A    C
ATOM     62  O   ALA    68      20.660 -33.551   2.270  1.00 30.22      A    O
ATOM     63  N   LYS    69      18.623 -33.565   3.212  1.00 29.94      A    N
ATOM     64  CA  LYS    69      19.131 -33.726   4.570  1.00 31.16      A    C
ATOM     65  CB  LYS    69      18.197 -33.047   5.575  1.00 33.82      A    C
ATOM     66  CG  LYS    69      17.843 -31.621   5.209  1.00 36.96      A    C
ATOM     67  CD  LYS    69      18.947 -30.629   5.550  1.00 38.61      A    C
ATOM     68  CE  LYS    69      18.481 -29.195   5.237  1.00 41.46      A    C
ATOM     69  NZ  LYS    69      19.397 -28.113   5.730  1.00 40.68      A    N
ATOM     70  C   LYS    69      19.233 -35.212   4.887  1.00 29.96      A    C
ATOM     71  O   LYS    69      18.252 -35.845   5.273  1.00 30.13      A    O
ATOM     72  N   ASP    70      20.427 -35.764   4.731  1.00 28.75      A    N
ATOM     73  CA  ASP    70      20.580 -37.202   4.782  1.00 27.72      A    C
ATOM     74  CB  ASP    70      22.052 -37.571   4.623  1.00 30.38      A    C
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ATOM     75  CG  ASP    70      22.243 -38.864   3.847  1.00 33.51      A    C
ATOM     76  OD1 ASP    70      21.800 -38.932   2.675  1.00 34.66      A    O
ATOM     77  OD2 ASP    70      22.834 -39.813   4.406  1.00 33.99      A    O
ATOM     78  C   ASP    70      20.008 -37.850   6.045  1.00 25.79      A    C
ATOM     79  O   ASP    70      19.346 -38.878   5.970  1.00 25.05      A    O
ATOM     80  N   PRO    71      20.258 -37.265   7.225  1.00 24.83      A    N
ATOM     81  CD  PRO    71      21.116 -36.107   7.526  1.00 24.43      A    C
ATOM     82  CA  PRO    71      19.729 -37.890   8.445  1.00 24.69      A    C
ATOM     83  CB  PRO    71      20.456 -37.157   9.572  1.00 24.48      A    C
ATOM     84  CG  PRO    71      20.847 -35.854   8.980  1.00 24.31      A    C
ATOM     85  C   PRO    71      18.207 -37.806   8.587  1.00 24.67      A    C
ATOM     86  O   PRO    71      17.603 -38.557   9.353  1.00 25.53      A    O
ATOM     87  N   TRP    72      17.589 -36.892   7.848  1.00 22.88      A    N
ATOM     88  CA  TRP    72      16.145 -36.742   7.892  1.00 21.03      A    C
ATOM     89  CB  TRP    72      15.749 -35.337   7.462  1.00 21.00      A    C
ATOM     90  CG  TRP    72      16.168 -34.308   8.454  1.00 20.77      A    C
ATOM     91  CD2 TRP    72      15.958 -32.894   8.366  1.00 18.78      A    C
ATOM     92  CE2 TRP    72      16.470 -32.326   9.551  1.00 18.39      A    C
ATOM     93  CE3 TRP    72      15.390 -32.056   7.406  1.00 16.68      A    C
ATOM     94  CD1 TRP    72      16.785 -34.531   9.650  1.00 19.91      A    C
ATOM     95  NE1 TRP    72      16.967 -33.345  10.316  1.00 19.30      A    N
ATOM     96  CZ2 TRP    72      16.425 -30.956   9.796  1.00 15.74      A    C
ATOM     97  CZ3 TRP    72      15.348 -30.701   7.654  1.00 14.03      A    C
ATOM     98  CH2 TRP    72      15.861 -30.165   8.838  1.00 14.11      A    C
ATOM     99  C   TRP    72      15.486 -37.762   6.993  1.00 21.80      A    C
ATOM    100  O   TRP    72      14.281 -38.007   7.090  1.00 24.16      A    O
ATOM    101  N   ARG    73      16.288 -38.362   6.120  1.00 21.43      A    N
ATOM    102  CA  ARG    73      15.820 -39.451   5.266  1.00 18.71      A    C
ATOM    103  CB  ARG    73      16.942 -39.936   4.341  1.00 15.20      A    C
ATOM    104  CG  ARG    73      17.321 -38.950   3.272  1.00 13.51      A    C
ATOM    105  CD  ARG    73      18.419 -39.521   2.401  1.00 15.16      A    C
ATOM    106  NE  ARG    73      18.059 -40.830   1.856  1.00 15.36      A    N
ATOM    107  CZ  ARG    73      18.930 -41.794   1.576  1.00 13.61      A    C
ATOM    108  NH1 ARG    73      20.222 -41.601   1.793  1.00 10.92      A    N
ATOM    109  NH2 ARG    73      18.507 -42.950   1.079  1.00 11.59      A    N
ATOM    110  C   ARG    73      15.297 -40.629   6.081  1.00 17.55      A    C
ATOM    111  O   ARG    73      15.826 -40.952   7.147  1.00 16.42      A    O
ATOM    112  N   LEU    74      14.245 -41.248   5.556  1.00 17.09      A    N
ATOM    113  CA  LEU    74      13.646 -42.438   6.131  1.00 17.51      A    C
ATOM    114  CB  LEU    74      12.264 -42.115   6.721  1.00 16.82      A    C
ATOM    115  CG  LEU    74      12.207 -41.101   7.868  1.00 17.36      A    C
ATOM    116  CD1 LEU    74      10.767 -40.742   8.206  1.00 15.71      A    C
ATOM    117  CD2 LEU    74      12.914 -41.689   9.069  1.00 14.95      A    C
ATOM    118  C   LEU    74      13.493 -43.437   4.994  1.00 18.74      A    C
ATOM    119  O   LEU    74      12.401 -43.611   4.451  1.00 20.09      A    O
ATOM    120  N   PRO    75      14.594 -44.102   4.610  1.00 19.33      A    N
ATOM    121  CD  PRO    75      15.932 -43.950   5.198  1.00 17.44      A    C
ATOM    122  CA  PRO    75      14.608 -44.997   3.446  1.00 18.25      A    C
ATOM    123  CB  PRO    75      16.091 -45.274   3.226  1.00 16.29      A    C
ATOM    124  CG  PRO    75      16.714 -45.036   4.531  1.00 15.69      A    C
ATOM    125  C   PRO    75      13.802 -46.280   3.619  1.00 18.01      A    C
ATOM    126  O   PRO    75      13.625 -46.766   4.729  1.00 19.35      A    O
ATOM    127  N   GLY    76      13.319 -46.828   2.510  1.00 17.66      A    N
ATOM    128  CA  GLY    76      12.610 -48.092   2.568  1.00 16.82      A    C
ATOM    129  C   GLY    76      11.119 -47.864   2.556  1.00 16.73      A    C
ATOM    130  O   GLY    76      10.328 -48.792   2.431  1.00 16.37      A    O
ATOM    131  N   THR    77      10.732 -46.610   2.702  1.00 16.94      A    N
ATOM    132  CA  THR    77       9.352 -46.241   2.510  1.00 18.46      A    C
ATOM    133  CB  THR    77       8.753 -45.699   3.799  1.00 20.12      A    C
ATOM    134  OG1 THR    77       8.988 -46.643   4.850  1.00 22.67      A    O
ATOM    135  CG2 THR    77       7.250 -45.499   3.642  1.00 20.19      A    C
ATOM    136  C   THR    77       9.301 -45.189   1.427  1.00 17.73      A    C
ATOM    137  O   THR    77      10.106 -44.259   1.415  1.00 17.66      A    O
ATOM    138  N   TYR    78       8.362 -45.354   0.501  1.00 18.93      A    N
ATOM    139  CA  TYR    78       8.281 -44.474  -0.656  1.00 19.73      A    C
ATOM    140  CB  TYR    78       8.854 -45.173  -1.892  1.00 18.09      A    C
ATOM    141  CG  TYR    78      10.285 -45.575  -1.679  1.00 19.07      A    C
ATOM    142  CD1 TYR    78      10.601 -46.777  -1.050  1.00 19.20      A    C
ATOM    143  CE1 TYR    78      11.909 -47.114  -0.777  1.00 18.84      A    C
ATOM    144  CD2 TYR    78      11.323 -44.727  -2.035  1.00 18.89      A    C
ATOM    145  CE2 TYR    78      12.633 -45.061  -1.771  1.00 18.34      A    C
ATOM    146  CZ  TYR    78      12.917 -46.252  -1.137  1.00 18.13      A    C
ATOM    147  OH  TYR    78      14.215 -46.565  -0.835  1.00 20.00      A    O
ATOM    148  C   TYR    78       6.861 -44.025  -0.917  1.00 20.34      A    C
ATOM    149  O   TYR    78       5.894 -44.735  -0.617  1.00 21.95      A    O
ATOM    150  N   VAL    79       6.750 -42.826  -1.472  1.00 20.31      A    N
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ATOM    151  CA  VAL    79       5.460 -42.246  -1.791  1.00 19.33      A    C
ATOM    152  CB  VAL    79       5.336 -40.845  -1.171  1.00 19.66      A    C
ATOM    153  CG1 VAL    79       3.957 -40.279  -1.436  1.00 20.37      A    C
ATOM    154  CG2 VAL    79       5.620 -40.916   0.319  1.00 17.38      A    C
ATOM    155  C   VAL    79       5.344 -42.140  -3.302  1.00 18.08      A    C
ATOM    156  O   VAL    79       5.816 -41.188  -3.900  1.00 18.83      A    O
ATOM    157  N   VAL    80       4.716 -43.129  -3.919  1.00 18.93      A    N
ATOM    158  CA  VAL    80       4.508 -43.112  -5.359  1.00 18.97      A    C
ATOM    159  CB  VAL    80       4.142 -44.508  -5.872  1.00 18.62      A    C
ATOM    160  CG1 VAL    80       4.083 -44.504  -7.391  1.00 16.15      A    C
ATOM    161  CG2 VAL    80       5.150 -45.513  -5.356  1.00 16.43      A    C
ATOM    162  C   VAL    80       3.386 -42.157  -5.727  1.00 19.40      A    C
ATOM    163  O   VAL    80       2.241 -42.362  -5.327  1.00 19.75      A    O
ATOM    164  N   VAL    81       3.733 -41.123  -6.492  1.00 20.81      A    N
ATOM    165  CA  VAL    81       2.808 -40.060  -6.889  1.00 22.10      A    C
ATOM    166  CB  VAL    81       3.451 -38.651  -6.730  1.00 22.25      A    C
ATOM    167  CG1 VAL    81       2.536 -37.580  -7.304  1.00 19.18      A    C
ATOM    168  CG2 VAL    81       3.718 -38.366  -5.264  1.00 22.64      A    C
ATOM    169  C   VAL    81       2.398 -40.229  -8.341  1.00 24.17      A    C
ATOM    170  O   VAL    81       3.212 -40.105  -9.259  1.00 24.19      A    O
ATOM    171  N   LEU    82       1.123 -40.509  -8.546  1.00 26.03      A    N
ATOM    172  CA  LEU    82       0.622 -40.717  -9.885  1.00 27.03      A    C
ATOM    173  CB  LEU    82      -0.593 -41.641  -9.828  1.00 27.37      A    C
ATOM    174  CG  LEU    82      -0.289 -42.868  -8.959  1.00 28.39      A    C
ATOM    175  CD1 LEU    82      -1.516 -43.767  -8.828  1.00 28.17      A    C
ATOM    176  CD2 LEU    82       0.889 -43.627  -9.574  1.00 27.31      A    C
ATOM    177  C   LEU    82       0.261 -39.362 -10.448  1.00 27.34      A    C
ATOM    178  O   LEU    82       0.098 -38.404  -9.701  1.00 24.96      A    O
ATOM    179  N   LYS    83       0.162 -39.279 -11.768  1.00 30.55      A    N
ATOM    180  CA  LYS    83      -0.317 -38.067 -12.414  1.00 33.51      A    C
ATOM    181  CB  LYS    83      -0.422 -38.286 -13.915  1.00 31.93      A    C
ATOM    182  CG  LYS    83       0.905 -38.539 -14.576  1.00 34.59      A    C
ATOM    183  CD  LYS    83       0.707 -39.240 -15.898  1.00 37.08      A    C
ATOM    184  CE  LYS    83       1.989 -39.282 -16.705  1.00 38.83      A    C
ATOM    185  NZ  LYS    83       1.749 -39.874 -18.052  1.00 40.48      A    N
ATOM    186  C   LYS    83      -1.682 -37.702 -11.852  1.00 36.22      A    C
ATOM    187  O   LYS    83      -2.568 -38.553 -11.750  1.00 36.20      A    O
ATOM    188  N   GLU    84      -1.855 -36.440 -11.475  1.00 38.84      A    N
ATOM    189  CA  GLU    84      -3.128 -36.023 -10.919  1.00 40.89      A    C
ATOM    190  CB  GLU    84      -3.069 -34.579 -10.428  1.00 42.22      A    C
ATOM    191  CG  GLU    84      -2.933 -33.546 -11.512  1.00 46.22      A    C
ATOM    192  CD  GLU    84      -3.066 -32.138 -10.964  1.00 49.28      A    C
ATOM    193  OE1 GLU    84      -3.370 -31.995  -9.759  1.00 50.03      A    O
ATOM    194  OE2 GLU    84      -2.872 -31.173 -11.734  1.00 51.27      A    O
ATOM    195  C   GLU    84      -4.181 -36.171 -11.996  1.00 41.56      A    C
ATOM    196  O   GLU    84      -3.880 -36.094 -13.190  1.00 40.94      A    O
ATOM    197  N   GLU    85      -5.413 -36.399 -11.558  1.00 42.71      A    N
ATOM    198  CA  GLU    85      -6.483 -36.829 -12.443  1.00 43.97      A    C
ATOM    199  CB  GLU    85      -6.446 -36.052 -13.759  1.00 47.49      A    C
ATOM    200  CG  GLU    85      -6.820 -34.579 -13.615  1.00 53.47      A    C
ATOM    201  CD  GLU    85      -6.879 -33.857 -14.955  1.00 57.25      A    C
ATOM    202  OE1 GLU    85      -7.821 -33.053 -15.160  1.00 58.40      A    O
ATOM    203  OE2 GLU    85      -5.985 -34.096 -15.804  1.00 58.66      A    O
ATOM    204  C   GLU    85      -6.407 -38.323 -12.724  1.00 41.83      A    C
ATOM    205  O   GLU    85      -7.152 -38.839 -13.549  1.00 42.95      A    O
ATOM    206  N   THR    86      -5.503 -39.019 -12.042  1.00 39.72      A    N
ATOM    207  CA  THR    86      -5.578 -40.471 -11.973  1.00 36.25      A    C
ATOM    208  CB  THR    86      -4.213 -41.106 -11.608  1.00 34.62      A    C
ATOM    209  OG1 THR    86      -3.301 -40.957 -12.701  1.00 30.95      A    O
ATOM    210  CG2 THR    86      -4.379 -42.585 -11.295  1.00 33.47      A    C
ATOM    211  C   THR    86      -6.599 -40.825 -10.902  1.00 35.99      A    C
ATOM    212  O   THR    86      -6.593 -40.255  -9.817  1.00 36.01      A    O
ATOM    213  N   HIS    87      -7.482 -41.761 -11.213  1.00 35.71      A    N
ATOM    214  CA  HIS    87      -8.564 -42.089 -10.312  1.00 36.27      A    C
ATOM    215  CB  HIS    87      -9.823 -42.388 -11.112  1.00 38.72      A    C
ATOM    216  CG  HIS    87     -10.446 -41.172 -11.715  1.00 41.65      A    C
ATOM    217  CD2 HIS    87     -11.072 -40.117 -11.143  1.00 41.88      A    C
ATOM    218  ND1 HIS    87     -10.461 -40.937 -13.074  1.00 43.71      A    N
ATOM    219  CE1 HIS    87     -11.070 -39.790 -13.314  1.00 43.53      A    C
ATOM    220  NE2 HIS    87     -11.451 -39.273 -12.159  1.00 43.79      A    N
ATOM    221  C   HIS    87      -8.239 -43.251  -9.393  1.00 35.80      A    C
ATOM    222  O   HIS    87      -7.406 -44.097  -9.705  1.00 36.51      A    O
ATOM    223  N   LEU    88      -8.925 -43.288  -8.258  1.00 34.46      A    N
ATOM    224  CA  LEU    88      -8.567 -44.177  -7.168  1.00 32.12      A    C
ATOM    225  CB  LEU    88      -9.537 -43.994  -6.004  1.00 28.85      A    C
ATOM    226  CG  LEU    88      -9.207 -44.893  -4.817  1.00 26.89      A    C
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ATOM    227  CD1 LEU    88      -7.810 -44.563  -4.298  1.00 25.11      A    C
ATOM    228  CD2 LEU    88     -10.249 -44.724  -3.744  1.00 24.99      A    C
ATOM    229  C   LEU    88      -8.511 -45.652  -7.549  1.00 31.90      A    C
ATOM    230  O   LEU    88      -7.850 -46.438  -6.866  1.00 32.53      A    O
ATOM    231  N   SER    89      -9.184 -46.038  -8.628  1.00 31.60      A    N
ATOM    232  CA  SER    89      -9.173 -47.440  -9.012  1.00 32.76      A    C
ATOM    233  CB  SER    89     -10.412 -47.801  -9.813  1.00 32.88      A    C
ATOM    234  OG  SER    89     -10.215 -47.494 -11.183  1.00 37.17      A    O
ATOM    235  C   SER    89      -7.938 -47.674  -9.875  1.00 32.28      A    C
ATOM    236  O   SER    89      -7.371 -48.771  -9.852  1.00 32.59      A    O
ATOM    237  N   GLN    90      -7.533 -46.652 -10.641  1.00 33.53      A    N
ATOM    238  CA  GLN    90      -6.260 -46.691 -11.384  1.00 35.45      A    C
ATOM    239  CB  GLN    90      -6.130 -45.500 -12.337  1.00 38.30      A    C
ATOM    240  CG  GLN    90      -7.054 -45.578 -13.538  1.00 41.60      A    C
ATOM    241  CD  GLN    90      -7.386 -44.199 -14.107  1.00 44.93      A    C
ATOM    242  OE1 GLN    90      -6.964 -43.179 -13.553  1.00 46.74      A    O
ATOM    243  NE2 GLN    90      -8.148 -44.162 -15.214  1.00 46.21      A    N
ATOM    244  C   GLN    90      -5.081 -46.714 -10.399  1.00 33.56      A    C
ATOM    245  O   GLN    90      -4.123 -47.444 -10.636  1.00 33.85      A    O
ATOM    246  N   SER    91      -5.176 -45.966  -9.289  1.00 32.27      A    N
ATOM    247  CA  SER    91      -4.234 -46.079  -8.168  1.00 31.90      A    C
ATOM    248  CB  SER    91      -4.673 -45.187  -7.010  1.00 32.61      A    C
ATOM    249  OG  SER    91      -4.020 -43.938  -7.044  1.00 35.88      A    O
ATOM    250  C   SER    91      -4.116 -47.509  -7.667  1.00 30.46      A    C
ATOM    251  O   SER    91      -3.053 -48.115  -7.740  1.00 29.82      A    O
ATOM    252  N   GLU    92      -5.219 -48.040  -7.159  1.00 30.78      A    N
ATOM    253  CA  GLU    92      -5.238 -49.385  -6.616  1.00 29.62      A    C
ATOM    254  CB  GLU    92      -6.652 -49.765  -6.200  1.00 30.03      A    C
ATOM    255  CG  GLU    92      -7.297 -48.854  -5.173  1.00 31.12      A    C
ATOM    256  CD  GLU    92      -8.720 -49.289  -4.847  1.00 33.15      A    C
ATOM    257  OE1 GLU    92      -9.229 -50.204  -5.540  1.00 33.55      A    O
ATOM    258  OE2 GLU    92      -9.326 -48.720  -3.908  1.00 32.58      A    O
ATOM    259  C   GLU    92      -4.738 -50.399  -7.632  1.00 28.84      A    C
ATOM    260  O   GLU    92      -4.051 -51.353  -7.275  1.00 27.60      A    O
ATOM    261  N   ARG    93      -5.087 -50.202  -8.899  1.00 28.96      A    N
ATOM    262  CA  ARG    93      -4.744 -51.186  -9.911  1.00 29.05      A    C
ATOM    263  CB  ARG    93      -5.381 -50.820 -11.259  1.00 31.00      A    C
ATOM    264  CG  ARG    93      -5.574 -52.005 -12.218  1.00 34.57      A    C
ATOM    265  CD  ARG    93      -6.296 -51.599 -13.519  1.00 39.82      A    C
ATOM    266  NE  ARG    93      -7.724 -51.277 -13.341  1.00 44.62      A    N
ATOM    267  CZ  ARG    93      -8.288 -50.103 -13.651  1.00 45.59      A    C
ATOM    268  NH1 ARG    93      -9.594 -49.903 -13.456  1.00 44.61      A    N
ATOM    269  NH2 ARG    93      -7.548 -49.120 -14.155  1.00 45.28      A    N
ATOM    270  C   ARG    93      -3.229 -51.201 -10.020  1.00 27.72      A    C
ATOM    271  O   ARG    93      -2.613 -52.261 -10.149  1.00 26.82      A    O
ATOM    272  N   THR    94      -2.640 -50.011  -9.932  1.00 27.00      A    N
ATOM    273  CA  THR    94      -1.197 -49.837 -10.068  1.00 26.48      A    C
ATOM    274  CB  THR    94      -0.822 -48.354 -10.250  1.00 25.41      A    C
ATOM    275  OG1 THR    94      -1.140 -47.942 -11.585  1.00 24.63      A    O
ATOM    276  CG2 THR    94       0.657 -48.145  -9.995  1.00 25.11      A    C
ATOM    277  C   THR    94      -0.407 -50.388  -8.894  1.00 26.50      A    C
ATOM    278  O   THR    94       0.637 -51.007  -9.081  1.00 26.28      A    O
ATOM    279  N   ALA    95      -0.898 -50.155  -7.684  1.00 26.80      A    N
ATOM    280  CA  ALA    95      -0.282 -50.736  -6.508  1.00 26.79      A    C
ATOM    281  CB  ALA    95      -1.066 -50.347  -5.265  1.00 25.54      A    C
ATOM    282  C   ALA    95      -0.241 -52.257  -6.662  1.00 27.87      A    C
ATOM    283  O   ALA    95       0.753 -52.893  -6.322  1.00 28.83      A    O
ATOM    284  N   ARG    96      -1.318 -52.841  -7.180  1.00 28.88      A    N
ATOM    285  CA  ARG    96      -1.386 -54.297  -7.327  1.00 28.84      A    C
ATOM    286  CB  ARG    96      -2.785 -54.731  -7.793  1.00 29.30      A    C
ATOM    287  CG  ARG    96      -3.808 -54.845  -6.680  1.00 29.85      A    C
ATOM    288  CD  ARG    96      -5.163 -55.261  -7.206  1.00 31.96      A    C
ATOM    289  NE  ARG    96      -6.184 -54.262  -6.887  1.00 36.30      A    N
ATOM    290  CZ  ARG    96      -6.973 -53.679  -7.789  1.00 37.39      A    C
ATOM    291  NH1 ARG    96      -7.874 -52.774  -7.410  1.00 37.42      A    N
ATOM    292  NH2 ARG    96      -6.865 -54.005  -9.072  1.00 37.61      A    N
ATOM    293  C   ARG    96      -0.336 -54.783  -8.320  1.00 28.39      A    C
ATOM    294  O   ARG    96       0.303 -55.814  -8.113  1.00 28.76      A    O
ATOM    295  N   ARG    97      -0.163 -54.019  -9.391  1.00 27.77      A    N
ATOM    296  CA  ARG    97       0.755 -54.372 -10.459  1.00 28.70      A    C
ATOM    297  CB  ARG    97       0.576 -53.397 -11.628  1.00 30.62      A    C
ATOM    298  CG  ARG    97       1.419 -53.715 -12.834  1.00 34.83      A    C
ATOM    299  CD  ARG    97       1.054 -52.827 -14.005  1.00 39.80      A    C
ATOM    300  NE  ARG    97       0.580 -53.596 -15.155  1.00 43.80      A    N
ATOM    301  CZ  ARG    97      -0.693 -53.661 -15.537  1.00 45.70      A    C
ATOM    302  NH1 ARG    97      -1.037 -54.385 -16.595  1.00 47.10      A    N
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ATOM    303  NH2 ARG    97      -1.627 -53.000 -14.865  1.00 45.89      A    N
ATOM    304  C   ARG    97       2.202 -54.346  -9.964  1.00 27.88      A    C
ATOM    305  O   ARG    97       2.983 -55.253 -10.248  1.00 28.38      A    O
ATOM    306  N   LEU    98       2.545 -53.296  -9.223  1.00 27.13      A    N
ATOM    307  CA  LEU    98       3.852 -53.161  -8.585  1.00 23.63      A    C
ATOM    308  CB  LEU    98       3.863 -51.911  -7.705  1.00 23.28      A    C
ATOM    309  CG  LEU    98       4.960 -51.732  -6.656  1.00 24.24      A    C
ATOM    310  CD1 LEU    98       6.330 -51.842  -7.301  1.00 25.92      A    C
ATOM    311  CD2 LEU    98       4.798 -50.374  -5.996  1.00 23.55      A    C
ATOM    312  C   LEU    98       4.115 -54.376  -7.732  1.00 22.69      A    C
ATOM    313  O   LEU    98       5.145 -55.031  -7.849  1.00 23.28      A    O
ATOM    314  N   GLN    99       3.147 -54.664  -6.874  1.00 22.76      A    N
ATOM    315  CA  GLN    99       3.208 -55.766  -5.931  1.00 21.72      A    C
ATOM    316  CB  GLN    99       1.848 -55.904  -5.261  1.00 23.87      A    C
ATOM    317  CG  GLN    99       1.895 -56.405  -3.838  1.00 28.10      A    C
ATOM    318  CD  GLN    99       1.583 -55.309  -2.857  1.00 28.27      A    C
ATOM    319  OE1 GLN    99       1.373 -55.555  -1.669  1.00 29.74      A    O
ATOM    320  NE2 GLN    99       1.551 -54.078  -3.351  1.00 29.27      A    N
ATOM    321  C   GLN    99       3.569 -57.066  -6.644  1.00 20.42      A    C
ATOM    322  O   GLN    99       4.434 -57.822  -6.196  1.00 18.61      A    O
ATOM    323  N   ALA   100       2.886 -57.306  -7.759  1.00 19.89      A    N
ATOM    324  CA  ALA   100       3.071 -58.504  -8.567  1.00 19.33      A    C
ATOM    325  CB  ALA   100       2.023 -58.546  -9.668  1.00 17.45      A    C
ATOM    326  C   ALA   100       4.464 -58.551  -9.180  1.00 18.79      A    C
ATOM    327  O   ALA   100       5.216 -59.499  -8.959  1.00 21.98      A    O
ATOM    328  N   GLN   101       4.803 -57.524  -9.950  1.00 16.83      A    N
ATOM    329  CA  GLN   101       6.090 -57.452 -10.617  1.00 14.81      A    C
ATOM    330  CB  GLN   101       6.204 -56.118 -11.339  1.00 14.22      A    C
ATOM    331  CG  GLN   101       5.063 -55.912 -12.293  1.00 17.42      A    C
ATOM    332  CD  GLN   101       5.207 -54.679 -13.146  1.00 20.01      A    C
ATOM    333  OE1 GLN   101       4.281 -54.306 -13.870  1.00 24.17      A    O
ATOM    334  NE2 GLN   101       6.364 -54.033 -13.070  1.00 20.43      A    N
ATOM    335  C   GLN   101       7.217 -57.602  -9.607  1.00 15.13      A    C
ATOM    336  O   GLN   101       8.253 -58.205  -9.893  1.00 14.83      A    O
ATOM    337  N   ALA   102       6.997 -57.054  -8.417  1.00 14.58      A    N
ATOM    338  CA  ALA   102       7.975 -57.129  -7.348  1.00 13.30      A    C
ATOM    339  CB  ALA   102       7.632 -56.117  -6.279  1.00 11.40      A    C
ATOM    340  C   ALA   102       8.047 -58.536  -6.749  1.00 13.44      A    C
ATOM    341  O   ALA   102       9.107 -58.993  -6.339  1.00 12.59      A    O
ATOM    342  N   ALA   103       6.918 -59.226  -6.698  1.00 15.23      A    N
ATOM    343  CA  ALA   103       6.904 -60.566  -6.142  1.00 17.52      A    C
ATOM    344  CB  ALA   103       5.488 -61.014  -5.894  1.00 13.93      A    C
ATOM    345  C   ALA   103       7.587 -61.500  -7.124  1.00 20.68      A    C
ATOM    346  O   ALA   103       8.338 -62.395  -6.731  1.00 20.64      A    O
ATOM    347  N   ARG   104       7.329 -61.291  -8.407  1.00 23.25      A    N
ATOM    348  CA  ARG   104       7.976 -62.104  -9.411  1.00 26.07      A    C
ATOM    349  CB  ARG   104       7.556 -61.665 -10.806  1.00 28.33      A    C
ATOM    350  CG  ARG   104       6.248 -62.282 -11.215  1.00 33.77      A    C
ATOM    351  CD  ARG   104       5.898 -61.942 -12.629  1.00 39.49      A    C
ATOM    352  NE  ARG   104       4.707 -61.099 -12.687  1.00 46.45      A    N
ATOM    353  CZ  ARG   104       4.716 -59.802 -12.988  1.00 48.94      A    C
ATOM    354  NH1 ARG   104       3.572 -59.128 -13.016  1.00 50.90      A    N
ATOM    355  NH2 ARG   104       5.861 -59.179 -13.265  1.00 49.24      A    N
ATOM    356  C   ARG   104       9.481 -62.001  -9.257  1.00 27.46      A    C
ATOM    357  O   ARG   104      10.200 -62.974  -9.467  1.00 29.34      A    O
ATOM    358  N   ARG   105       9.963 -60.828  -8.874  1.00 28.17      A    N
ATOM    359  CA  ARG   105      11.384 -60.669  -8.636  1.00 27.57      A    C
ATOM    360  CB  ARG   105      11.786 -59.203  -8.778  1.00 29.99      A    C
ATOM    361  CG  ARG   105      11.942 -58.762 -10.220  1.00 34.08      A    C
ATOM    362  CD  ARG   105      12.558 -57.373 -10.326  1.00 38.94      A    C
ATOM    363  NE  ARG   105      14.002 -57.376 -10.107  1.00 43.02      A    N
ATOM    364  CZ  ARG   105      14.688 -56.338  -9.635  1.00 46.10      A    C
ATOM    365  NH1 ARG   105      16.004 -56.429  -9.470  1.00 48.21      A    N
ATOM    366  NH2 ARG   105      14.057 -55.210  -9.319  1.00 46.61      A    N
ATOM    367  C   ARG   105      11.775 -61.195  -7.260  1.00 26.22      A    C
ATOM    368  O   ARG   105      12.947 -61.228  -6.917  1.00 25.88      A    O
ATOM    369  N   GLY   106      10.793 -61.609  -6.473  1.00 26.12      A    N
ATOM    370  CA  GLY   106      11.090 -62.194  -5.174  1.00 25.74      A    C
ATOM    371  C   GLY   106      11.029 -61.231  -4.000  1.00 25.62      A    C
ATOM    372  O   GLY   106      11.455 -61.566  -2.892  1.00 25.64      A    O
ATOM    373  N   TYR   107      10.497 -60.035  -4.237  1.00 25.48      A    N
ATOM    374  CA  TYR   107      10.483 -58.990  -3.222  1.00 25.01      A    C
ATOM    375  CB  TYR   107      10.780 -57.627  -3.846  1.00 24.93      A    C
ATOM    376  CG  TYR   107      12.237 -57.386  -4.137  1.00 26.36      A    C
ATOM    377  CD1 TYR   107      13.070 -56.810  -3.183  1.00 25.53      A    C
ATOM    378  CE1 TYR   107      14.406 -56.570  -3.448  1.00 26.30      A    C
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ATOM    379  CD2 TYR   107      12.781 -57.724  -5.369  1.00 26.57      A    C
ATOM    380  CE2 TYR   107      14.117 -57.487  -5.647  1.00 27.76      A    C
ATOM    381  CZ  TYR   107      14.927 -56.909  -4.684  1.00 28.67      A    C
ATOM    382  OH  TYR   107      16.248 -56.640  -4.975  1.00 29.04      A    O
ATOM    383  C   TYR   107       9.173 -58.906  -2.471  1.00 24.19      A    C
ATOM    384  O   TYR   107       8.110 -58.711  -3.054  1.00 25.14      A    O
ATOM    385  N   LEU   108       9.266 -59.045  -1.159  1.00 24.06      A    N
ATOM    386  CA  LEU   108       8.158 -58.736  -0.275  1.00 23.48      A    C
ATOM    387  CB  LEU   108       8.537 -59.153   1.142  1.00 22.61      A    C
ATOM    388  CG  LEU   108       7.498 -58.975   2.234  1.00 24.41      A    C
ATOM    389  CD1 LEU   108       6.261 -59.780   1.881  1.00 27.40      A    C
ATOM    390  CD2 LEU   108       8.078 -59.433   3.562  1.00 25.45      A    C
ATOM    391  C   LEU   108       7.891 -57.223  -0.343  1.00 22.40      A    C
ATOM    392  O   LEU   108       8.830 -56.431  -0.309  1.00 23.50      A    O
ATOM    393  N   THR   109       6.625 -56.822  -0.464  1.00 21.22      A    N
ATOM    394  CA  THR   109       6.268 -55.405  -0.403  1.00 19.07      A    C
ATOM    395  CB  THR   109       6.087 -54.760  -1.794  1.00 19.59      A    C
ATOM    396  OG1 THR   109       4.895 -55.264  -2.398  1.00 19.90      A    O
ATOM    397  CG2 THR   109       7.274 -55.056  -2.694  1.00 20.38      A    C
ATOM    398  C   THR   109       4.956 -55.235   0.309  1.00 17.86      A    C
ATOM    399  O   THR   109       4.152 -56.150   0.351  1.00 17.14      A    O
ATOM    400  N   LYS   110       4.741 -54.044   0.849  1.00 18.44      A    N
ATOM    401  CA  LYS   110       3.512 -53.738   1.552  1.00 19.57      A    C
ATOM    402  CB  LYS   110       3.736 -53.841   3.054  1.00 20.21      A    C
ATOM    403  CG  LYS   110       2.505 -53.554   3.861  1.00 22.66      A    C
ATOM    404  CD  LYS   110       2.449 -54.457   5.061  1.00 24.45      A    C
ATOM    405  CE  LYS   110       1.013 -54.835   5.367  1.00 26.17      A    C
ATOM    406  NZ  LYS   110       0.944 -56.041   6.235  1.00 28.22      A    N
ATOM    407  C   LYS   110       3.001 -52.347   1.219  1.00 19.90      A    C
ATOM    408  O   LYS   110       3.728 -51.359   1.344  1.00 20.91      A    O
ATOM    409  N   ILE   111       1.741 -52.270   0.809  1.00 19.04      A    N
ATOM    410  CA  ILE   111       1.085 -50.982   0.623  1.00 18.90      A    C
ATOM    411  CB  ILE   111      -0.029 -51.093  -0.406  1.00 17.72      A    C
ATOM    412  CG2 ILE   111      -0.751 -49.766  -0.525  1.00 18.36      A    C
ATOM    413  CG1 ILE   111       0.559 -51.524  -1.750  1.00 19.16      A    C
ATOM    414  CD1 ILE   111       1.519 -50.522  -2.347  1.00 17.38      A    C
ATOM    415  C   ILE   111       0.498 -50.431   1.927  1.00 18.80      A    C
ATOM    416  O   ILE   111      -0.408 -51.018   2.512  1.00 17.44      A    O
ATOM    417  N   LEU   112       1.016 -49.291   2.373  1.00 19.52      A    N
ATOM    418  CA  LEU   112       0.667 -48.762   3.687  1.00 19.22      A    C
ATOM    419  CB  LEU   112       1.845 -47.976   4.273  1.00 19.32      A    C
ATOM    420  CG  LEU   112       3.124 -48.811   4.439  1.00 22.22      A    C
ATOM    421  CD1 LEU   112       4.303 -47.914   4.746  1.00 22.17      A    C
ATOM    422  CD2 LEU   112       2.935 -49.838   5.534  1.00 20.39      A    C
ATOM    423  C   LEU   112      -0.565 -47.883   3.622  1.00 18.62      A    C
ATOM    424  O   LEU   112      -1.298 -47.762   4.599  1.00 18.34      A    O
ATOM    425  N   HIS   113      -0.800 -47.284   2.460  1.00 18.84      A    N
ATOM    426  CA  HIS   113      -1.900 -46.344   2.299  1.00 19.02      A    C
ATOM    427  CB  HIS   113      -1.589 -45.050   3.057  1.00 20.19      A    C
ATOM    428  CG  HIS   113      -2.658 -44.007   2.949  1.00 22.51      A    C
ATOM    429  CD2 HIS   113      -2.829 -42.992   2.066  1.00 22.37      A    C
ATOM    430  ND1 HIS   113      -3.716 -43.931   3.830  1.00 21.62      A    N
ATOM    431  CE1 HIS   113      -4.492 -42.916   3.494  1.00 21.55      A    C
ATOM    432  NE2 HIS   113      -3.977 -42.330   2.428  1.00 21.95      A    N
ATOM    433  C   HIS   113      -2.114 -46.036   0.829  1.00 18.98      A    C
ATOM    434  O   HIS   113      -1.163 -45.968   0.059  1.00 19.75      A    O
ATOM    435  N   VAL   114      -3.366 -45.854   0.434  1.00 19.49      A    N
ATOM    436  CA  VAL   114      -3.662 -45.387  -0.910  1.00 20.33      A    C
ATOM    437  CB  VAL   114      -4.528 -46.418  -1.678  1.00 19.03      A    C
ATOM    438  CG1 VAL   114      -4.729 -45.983  -3.119  1.00 16.98      A    C
ATOM    439  CG2 VAL   114      -3.865 -47.777  -1.635  1.00 18.60      A    C
ATOM    440  C   VAL   114      -4.414 -44.071  -0.793  1.00 21.30      A    C
ATOM    441  O   VAL   114      -5.416 -43.998  -0.098  1.00 22.35      A    O
ATOM    442  N   PHE   115      -3.932 -43.035  -1.468  1.00 22.44      A    N
ATOM    443  CA  PHE   115      -4.532 -41.713  -1.351  1.00 25.41      A    C
ATOM    444  CB  PHE   115      -3.513 -40.640  -1.757  1.00 26.99      A    C
ATOM    445  CG  PHE   115      -2.287 -40.613  -0.890  1.00 27.32      A    C
ATOM    446  CD1 PHE   115      -1.182 -41.383  -1.209  1.00 26.01      A    C
ATOM    447  CD2 PHE   115      -2.247 -39.836   0.259  1.00 26.96      A    C
ATOM    448  CE1 PHE   115      -0.068 -41.383  -0.403  1.00 24.13      A    C
ATOM    449  CE2 PHE   115      -1.130 -39.833   1.070  1.00 25.59      A    C
ATOM    450  CZ  PHE   115      -0.043 -40.607   0.736  1.00 24.86      A    C
ATOM    451  C   PHE   115      -5.813 -41.538  -2.171  1.00 26.85      A    C
ATOM    452  O   PHE   115      -5.856 -41.860  -3.371  1.00 27.95      A    O
ATOM    453  N   HIS   116      -6.844 -41.019  -1.503  1.00 26.78      A    N
ATOM    454  CA  HIS   116      -8.118 -40.659  -2.124  1.00 27.32      A    C
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ATOM    455  CB  HIS   116      -9.299 -40.991  -1.192  1.00 24.94      A    C
ATOM    456  CG  HIS   116      -9.464 -42.450  -0.886  1.00 24.70      A    C
ATOM    457  CD2 HIS   116     -10.571 -43.177  -0.597  1.00 24.63      A    C
ATOM    458  ND1 HIS   116      -8.406 -43.330  -0.821  1.00 25.06      A    N
ATOM    459  CE1 HIS   116      -8.852 -44.534  -0.506  1.00 23.26      A    C
ATOM    460  NE2 HIS   116     -10.162 -44.468  -0.365  1.00 22.78      A    N
ATOM    461  C   HIS   116      -8.144 -39.153  -2.418  1.00 28.43      A    C
ATOM    462  O   HIS   116      -9.172 -38.612  -2.819  1.00 29.04      A    O
ATOM    463  N   GLY   117      -7.022 -38.474  -2.215  1.00 29.51      A    N
ATOM    464  CA  GLY   117      -7.061 -37.021  -2.127  1.00 32.31      A    C
ATOM    465  C   GLY   117      -7.039 -36.199  -3.416  1.00 32.25      A    C
ATOM    466  O   GLY   117      -7.454 -36.658  -4.489  1.00 32.39      A    O
ATOM    467  N   LEU   118      -6.568 -34.957  -3.286  1.00 30.44      A    N
ATOM    468  CA  LEU   118      -6.261 -34.099  -4.427  1.00 29.49      A    C
ATOM    469  CB  LEU   118      -6.188 -32.630  -3.991  1.00 27.76      A    C
ATOM    470  CG  LEU   118      -7.442 -31.991  -3.399  1.00 26.47      A    C
ATOM    471  CD1 LEU   118      -7.061 -30.748  -2.612  1.00 26.36      A    C
ATOM    472  CD2 LEU   118      -8.421 -31.662  -4.511  1.00 25.77      A    C
ATOM    473  C   LEU   118      -4.906 -34.520  -4.966  1.00 29.07      A    C
ATOM    474  O   LEU   118      -4.345 -33.878  -5.848  1.00 29.41      A    O
ATOM    475  N   LEU   119      -4.382 -35.602  -4.407  1.00 29.30      A    N
ATOM    476  CA  LEU   119      -3.057 -36.084  -4.747  1.00 29.49      A    C
ATOM    477  CB  LEU   119      -2.093 -35.724  -3.624  1.00 28.72      A    C
ATOM    478  CG  LEU   119      -0.605 -35.959  -3.870  1.00 30.16      A    C
ATOM    479  CD1 LEU   119       0.070 -34.639  -4.268  1.00 29.01      A    C
ATOM    480  CD2 LEU   119       0.025 -36.538  -2.602  1.00 29.14      A    C
ATOM    481  C   LEU   119      -3.090 -37.600  -4.935  1.00 29.79      A    C
ATOM    482  O   LEU   119      -2.874 -38.358  -3.988  1.00 30.11      A    O
ATOM    483  N   PRO   120      -3.369 -38.061  -6.164  1.00 29.03      A    N
ATOM    484  CD  PRO   120      -3.629 -37.259  -7.367  1.00 28.57      A    C
ATOM    485  CA  PRO   120      -3.499 -39.498  -6.422  1.00 28.72      A    C
ATOM    486  CB  PRO   120      -4.078 -39.562  -7.831  1.00 27.70      A    C
ATOM    487  CG  PRO   120      -3.675 -38.291  -8.455  1.00 28.64      A    C
ATOM    488  C   PRO   120      -2.178 -40.242  -6.312  1.00 27.90      A    C
ATOM    489  O   PRO   120      -1.167 -39.838  -6.890  1.00 28.70      A    O
ATOM    490  N   GLY   121      -2.196 -41.334  -5.561  1.00 27.12      A    N
ATOM    491  CA  GLY   121      -0.998 -42.130  -5.392  1.00 25.12      A    C
ATOM    492  C   GLY   121      -1.206 -43.167  -4.315  1.00 24.57      A    C
ATOM    493  O   GLY   121      -2.343 -43.528  -4.009  1.00 25.06      A    O
ATOM    494  N   PHE   122      -0.108 -43.652  -3.746  1.00 23.56      A    N
ATOM    495  CA  PHE   122      -0.166 -44.565  -2.611  1.00 22.66      A    C
ATOM    496  CB  PHE   122      -0.560 -45.971  -3.064  1.00 23.01      A    C
ATOM    497  CG  PHE   122       0.355 -46.552  -4.109  1.00 25.01      A    C
ATOM    498  CD1 PHE   122       1.428 -47.349  -3.747  1.00 24.64      A    C
ATOM    499  CD2 PHE   122       0.128 -46.320  -5.457  1.00 25.34      A    C
ATOM    500  CE1 PHE   122       2.252 -47.903  -4.707  1.00 23.88      A    C
ATOM    501  CE2 PHE   122       0.952 -46.874  -6.421  1.00 25.50      A    C
ATOM    502  CZ  PHE   122       2.015 -47.667  -6.043  1.00 24.61      A    C
ATOM    503  C   PHE   122       1.196 -44.603  -1.945  1.00 22.06      A    C
ATOM    504  O   PHE   122       2.181 -44.162  -2.520  1.00 22.52      A    O
ATOM    505  N   LEU   123       1.237 -45.115  -0.722  1.00 22.50      A    N
ATOM    506  CA  LEU   123       2.466 -45.171   0.064  1.00 23.34      A    C
ATOM    507  CB  LEU   123       2.257 -44.478   1.424  1.00 22.27      A    C
ATOM    508  CG  LEU   123       3.295 -44.748   2.522  1.00 20.76      A    C
ATOM    509  CD1 LEU   123       4.386 -43.683   2.536  1.00 18.72      A    C
ATOM    510  CD2 LEU   123       2.585 -44.776   3.841  1.00 19.62      A    C
ATOM    511  C   LEU   123       2.882 -46.627   0.279  1.00 23.45      A    C
ATOM    512  O   LEU   123       2.122 -47.432   0.828  1.00 23.19      A    O
ATOM    513  N   VAL   124       4.094 -46.958  -0.152  1.00 23.78      A    N
ATOM    514  CA  VAL   124       4.541 -48.342  -0.136  1.00 23.86      A    C
ATOM    515  CB  VAL   124       4.718 -48.873  -1.580  1.00 21.15      A    C
ATOM    516  CG1 VAL   124       5.646 -47.970  -2.357  1.00 19.01      A    C
ATOM    517  CG2 VAL   124       5.263 -50.288  -1.550  1.00 21.68      A    C
ATOM    518  C   VAL   124       5.838 -48.557   0.657  1.00 24.98      A    C
ATOM    519  O   VAL   124       6.769 -47.751   0.596  1.00 23.20      A    O
ATOM    520  N   LYS   125       5.860 -49.648   1.418  1.00 26.11      A    N
ATOM    521  CA  LYS   125       7.057 -50.127   2.098  1.00 27.32      A    C
ATOM    522  CB  LYS   125       6.696 -50.623   3.498  1.00 25.97      A    C
ATOM    523  CG  LYS   125       7.812 -51.373   4.183  1.00 23.58      A    C
ATOM    524  CD  LYS   125       7.383 -51.861   5.549  1.00 25.85      A    C
ATOM    525  CE  LYS   125       8.566 -52.431   6.316  1.00 28.11      A    C
ATOM    526  NZ  LYS   125       8.220 -52.783   7.731  1.00 32.00      A    N
ATOM    527  C   LYS   125       7.673 -51.275   1.289  1.00 29.44      A    C
ATOM    528  O   LYS   125       7.025 -52.302   1.057  1.00 30.59      A    O
ATOM    529  N   MET   126       8.926 -51.097   0.873  1.00 29.55      A    N
ATOM    530  CA  MET   126       9.587 -52.004  -0.066  1.00 27.34      A    C
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ATOM    531  CB  MET   126       8.929 -51.896  -1.435  1.00 25.09      A    C
ATOM    532  CG  MET   126       9.170 -50.536  -2.052  1.00 24.16      A    C
ATOM    533  SD  MET   126       8.824 -50.453  -3.795  1.00 24.67      A    S
ATOM    534  CE  MET   126       9.694 -48.998  -4.214  1.00 24.23      A    C
ATOM    535  C   MET   126      11.054 -51.588  -0.208  1.00 27.55      A    C
ATOM    536  O   MET   126      11.407 -50.438   0.069  1.00 28.53      A    O
ATOM    537  N   SER   127      11.900 -52.514  -0.658  1.00 26.25      A    N
ATOM    538  CA  SER   127      13.272 -52.178  -1.035  1.00 24.19      A    C
ATOM    539  CB  SER   127      13.991 -53.408  -1.590  1.00 23.41      A    C
ATOM    540  OG  SER   127      15.272 -53.060  -2.093  1.00 19.90      A    O
ATOM    541  C   SER   127      13.336 -51.074  -2.081  1.00 23.63      A    C
ATOM    542  O   SER   127      12.560 -51.066  -3.036  1.00 23.04      A    O
ATOM    543  N   GLY   128      14.279 -50.153  -1.907  1.00 23.89      A    N
ATOM    544  CA  GLY   128      14.572 -49.194  -2.958  1.00 25.02      A    C
ATOM    545  C   GLY   128      15.125 -49.844  -4.221  1.00 25.07      A    C
ATOM    546  O   GLY   128      15.369 -49.174  -5.221  1.00 25.81      A    O
ATOM    547  N   ASP   129      15.321 -51.157  -4.182  1.00 24.43      A    N
ATOM    548  CA  ASP   129      15.845 -51.872  -5.327  1.00 23.02      A    C
ATOM    549  CB  ASP   129      16.282 -53.270  -4.923  1.00 25.00      A    C
ATOM    550  CG  ASP   129      17.578 -53.266  -4.157  1.00 26.85      A    C
ATOM    551  OD1 ASP   129      18.089 -52.159  -3.878  1.00 29.00      A    O
ATOM    552  OD2 ASP   129      18.086 -54.365  -3.840  1.00 27.23      A    O
ATOM    553  C   ASP   129      14.833 -51.972  -6.433  1.00 22.97      A    C
ATOM    554  O   ASP   129      15.178 -52.312  -7.556  1.00 24.66      A    O
ATOM    555  N   LEU   130      13.580 -51.677  -6.114  1.00 23.97      A    N
ATOM    556  CA  LEU   130      12.493 -51.807  -7.077  1.00 23.49      A    C
ATOM    557  CB  LEU   130      11.257 -52.375  -6.393  1.00 22.01      A    C
ATOM    558  CG  LEU   130      11.441 -53.659  -5.597  1.00 21.51      A    C
ATOM    559  CD1 LEU   130      10.365 -53.753  -4.524  1.00 19.81      A    C
ATOM    560  CD2 LEU   130      11.390 -54.837  -6.543  1.00 20.88      A    C
ATOM    561  C   LEU   130      12.139 -50.464  -7.700  1.00 23.13      A    C
ATOM    562  O   LEU   130      11.138 -50.344  -8.410  1.00 23.93      A    O
ATOM    563  N   LEU   131      12.954 -49.453  -7.429  1.00 23.29      A    N
ATOM    564  CA  LEU   131      12.666 -48.112  -7.915  1.00 24.47      A    C
ATOM    565  CB  LEU   131      13.665 -47.117  -7.331  1.00 23.09      A    C
ATOM    566  CG  LEU   131      13.505 -46.795  -5.843  1.00 22.95      A    C
ATOM    567  CD1 LEU   131      14.687 -45.956  -5.418  1.00 22.36      A    C
ATOM    568  CD2 LEU   131      12.188 -46.066  -5.568  1.00 20.28      A    C
ATOM    569  C   LEU   131      12.662 -48.002  -9.437  1.00 25.34      A    C
ATOM    570  O   LEU   131      11.704 -47.493 -10.025  1.00 25.04      A    O
ATOM    571  N   GLU   132      13.726 -48.473 -10.077  1.00 27.24      A    N
ATOM    572  CA  GLU   132      13.782 -48.456 -11.534  1.00 28.71      A    C
ATOM    573  CB  GLU   132      15.045 -49.164 -12.034  1.00 30.19      A    C
ATOM    574  CG  GLU   132      16.295 -48.304 -12.008  1.00 32.76      A    C
ATOM    575  CD  GLU   132      17.528 -49.061 -12.454  1.00 34.92      A    C
ATOM    576  OE1 GLU   132      17.661 -50.244 -12.069  1.00 34.12      A    O
ATOM    577  OE2 GLU   132      18.359 -48.476 -13.191  1.00 36.98      A    O
ATOM    578  C   GLU   132      12.547 -49.136 -12.112  1.00 29.50      A    C
ATOM    579  O   GLU   132      12.005 -48.697 -13.128  1.00 30.00      A    O
ATOM    580  N   LEU   133      12.106 -50.207 -11.451  1.00 29.35      A    N
ATOM    581  CA  LEU   133      10.930 -50.960 -11.879  1.00 28.02      A    C
ATOM    582  CB  LEU   133      10.769 -52.229 -11.036  1.00 28.47      A    C
ATOM    583  CG  LEU   133       9.429 -52.959 -11.156  1.00 26.56      A    C
ATOM    584  CD1 LEU   133       9.241 -53.439 -12.578  1.00 26.64      A    C
ATOM    585  CD2 LEU   133       9.397 -54.123 -10.206  1.00 25.35      A    C
ATOM    586  C   LEU   133       9.660 -50.132 -11.769  1.00 27.30      A    C
ATOM    587  O   LEU   133       8.901 -50.022 -12.733  1.00 27.98      A    O
ATOM    588  N   ALA   134       9.435 -49.555 -10.592  1.00 25.72      A    N
ATOM    589  CA  ALA   134       8.198 -48.831 -10.314  1.00 24.04      A    C
ATOM    590  CB  ALA   134       8.147 -48.430  -8.847  1.00 24.07      A    C
ATOM    591  C   ALA   134       8.032 -47.598 -11.195  1.00 21.33      A    C
ATOM    592  O   ALA   134       6.917 -47.263 -11.603  1.00 21.21      A    O
ATOM    593  N   LEU   135       9.141 -46.927 -11.487  1.00 18.76      A    N
ATOM    594  CA  LEU   135       9.103 -45.742 -12.323  1.00 17.09      A    C
ATOM    595  CB  LEU   135      10.491 -45.136 -12.414  1.00 17.50      A    C
ATOM    596  CG  LEU   135      10.969 -44.445 -11.139  1.00 18.25      A    C
ATOM    597  CD1 LEU   135      12.446 -44.197 -11.239  1.00 18.59      A    C
ATOM    598  CD2 LEU   135      10.227 -43.139 -10.937  1.00 19.48      A    C
ATOM    599  C   LEU   135       8.579 -46.054 -13.713  1.00 17.06      A    C
ATOM    600  O   LEU   135       7.968 -45.213 -14.352  1.00 16.31      A    O
ATOM    601  N   LYS   136       8.802 -47.277 -14.178  1.00 18.88      A    N
ATOM    602  CA  LYS   136       8.217 -47.722 -15.438  1.00 18.70      A    C
ATOM    603  CB  LYS   136       8.974 -48.935 -15.967  1.00 19.33      A    C
ATOM    604  CG  LYS   136      10.417 -48.673 -16.319  1.00 21.05      A    C
ATOM    605  CD  LYS   136      11.128 -49.987 -16.527  1.00 25.15      A    C
ATOM    606  CE  LYS   136      12.629 -49.826 -16.488  1.00 29.77      A    C
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ATOM    607  NZ  LYS   136      13.174 -49.445 -17.824  1.00 33.49      A    N
ATOM    608  C   LYS   136       6.718 -48.050 -15.366  1.00 18.94      A    C
ATOM    609  O   LYS   136       6.062 -48.132 -16.403  1.00 19.33      A    O
ATOM    610  N   LEU   137       6.175 -48.236 -14.160  1.00 19.09      A    N
ATOM    611  CA  LEU   137       4.736 -48.494 -13.999  1.00 18.90      A    C
ATOM    612  CB  LEU   137       4.378 -48.748 -12.526  1.00 16.30      A    C
ATOM    613  CG  LEU   137       4.790 -50.075 -11.878  1.00 15.79      A    C
ATOM    614  CD1 LEU   137       4.652 -49.976 -10.379  1.00 14.21      A    C
ATOM    615  CD2 LEU   137       3.936 -51.207 -12.414  1.00 16.03      A    C
ATOM    616  C   LEU   137       3.903 -47.320 -14.522  1.00 20.04      A    C
ATOM    617  O   LEU   137       4.313 -46.163 -14.450  1.00 19.08      A    O
ATOM    618  N   PRO   138       2.713 -47.611 -15.057  1.00 21.62      A    N
ATOM    619  CD  PRO   138       1.982 -48.887 -14.964  1.00 23.18      A    C
ATOM    620  CA  PRO   138       1.918 -46.579 -15.721  1.00 23.00      A    C
ATOM    621  CB  PRO   138       0.862 -47.385 -16.471  1.00 22.04      A    C
ATOM    622  CG  PRO   138       0.653 -48.578 -15.607  1.00 21.35      A    C
ATOM    623  C   PRO   138       1.306 -45.617 -14.705  1.00 22.95      A    C
ATOM    624  O   PRO   138       0.952 -46.032 -13.608  1.00 23.32      A    O
ATOM    625  N   HIS   139       1.195 -44.343 -15.080  1.00 23.11      A    N
ATOM    626  CA  HIS   139       0.543 -43.325 -14.258  1.00 23.62      A    C
ATOM    627  CB  HIS   139      -0.625 -43.920 -13.473  1.00 27.86      A    C
ATOM    628  CG  HIS   139      -1.698 -44.509 -14.334  1.00 31.12      A    C
ATOM    629  CD2 HIS   139      -2.450 -43.963 -15.320  1.00 30.94      A    C
ATOM    630  ND1 HIS   139      -2.103 -45.823 -14.227  1.00 32.87      A    N
ATOM    631  CE1 HIS   139      -3.058 -46.061 -15.108  1.00 32.29      A    C
ATOM    632  NE2 HIS   139      -3.286 -44.949 -15.784  1.00 32.01      A    N
ATOM    633  C   HIS   139       1.476 -42.648 -13.278  1.00 22.78      A    C
ATOM    634  O   HIS   139       1.107 -41.655 -12.658  1.00 23.61      A    O
ATOM    635  N   VAL   140       2.677 -43.195 -13.124  1.00 22.21      A    N
ATOM    636  CA  VAL   140       3.650 -42.649 -12.189  1.00 19.92      A    C
ATOM    637  CB  VAL   140       4.872 -43.576 -12.021  1.00 18.16      A    C
ATOM    638  CG1 VAL   140       5.852 -42.973 -11.029  1.00 16.60      A    C
ATOM    639  CG2 VAL   140       4.427 -44.938 -11.555  1.00 16.58      A    C
ATOM    640  C   VAL   140       4.138 -41.297 -12.677  1.00 19.89      A    C
ATOM    641  O   VAL   140       4.483 -41.124 -13.841  1.00 18.54      A    O
ATOM    642  N   ASP   141       4.158 -40.336 -11.765  1.00 21.38      A    N
ATOM    643  CA  ASP   141       4.647 -39.001 -12.065  1.00 21.70      A    C
ATOM    644  CB  ASP   141       3.736 -37.976 -11.401  1.00 23.53      A    C
ATOM    645  CG  ASP   141       3.853 -36.609 -12.018  1.00 24.88      A    C
ATOM    646  OD1 ASP   141       4.819 -36.375 -12.776  1.00 26.94      A    O
ATOM    647  OD2 ASP   141       2.971 -35.766 -11.741  1.00 27.24      A    O
ATOM    648  C   ASP   141       6.057 -38.889 -11.508  1.00 19.63      A    C
ATOM    649  O   ASP   141       6.989 -38.466 -12.190  1.00 18.59      A    O
ATOM    650  N   TYR   142       6.194 -39.293 -10.256  1.00 18.63      A    N
ATOM    651  CA  TYR   142       7.488 -39.383  -9.609  1.00 19.45      A    C
ATOM    652  CB  TYR   142       8.044 -37.980  -9.335  1.00 18.30      A    C
ATOM    653  CG  TYR   142       7.128 -37.082  -8.527  1.00 19.04      A    C
ATOM    654  CD1 TYR   142       7.309 -36.920  -7.157  1.00 18.23      A    C
ATOM    655  CE1 TYR   142       6.496 -36.077  -6.421  1.00 17.86      A    C
ATOM    656  CD2 TYR   142       6.103 -36.373  -9.141  1.00 18.51      A    C
ATOM    657  CE2 TYR   142       5.285 -35.528  -8.413  1.00 18.75      A    C
ATOM    658  CZ  TYR   142       5.486 -35.382  -7.054  1.00 19.08      A    C
ATOM    659  OH  TYR   142       4.676 -34.537  -6.331  1.00 18.33      A    O
ATOM    660  C   TYR   142       7.333 -40.160  -8.302  1.00 19.33      A    C
ATOM    661  O   TYR   142       6.219 -40.402  -7.843  1.00 19.86      A    O
ATOM    662  N   ILE   143       8.447 -40.564  -7.709  1.00 18.21      A    N
ATOM    663  CA  ILE   143       8.388 -41.236  -6.421  1.00 18.63      A    C
ATOM    664  CB  ILE   143       8.795 -42.710  -6.568  1.00 19.75      A    C
ATOM    665  CG2 ILE   143       8.693 -43.414  -5.224  1.00 19.43      A    C
ATOM    666  CG1 ILE   143       7.907 -43.383  -7.620  1.00 18.58      A    C
ATOM    667  CD1 ILE   143       8.575 -44.520  -8.370  1.00 15.29      A    C
ATOM    668  C   ILE   143       9.348 -40.544  -5.471  1.00 18.03      A    C
ATOM    669  O   ILE   143      10.498 -40.326  -5.819  1.00 20.14      A    O
ATOM    670  N   GLU   144       8.876 -40.182  -4.284  1.00 18.26      A    N
ATOM    671  CA  GLU   144       9.733 -39.529  -3.292  1.00 19.45      A    C
ATOM    672  CB  GLU   144       9.167 -38.157  -2.908  1.00 18.29      A    C
ATOM    673  CG  GLU   144      10.120 -37.303  -2.068  1.00 19.87      A    C
ATOM    674  CD  GLU   144       9.478 -36.013  -1.543  1.00 21.24      A    C
ATOM    675  OE1 GLU   144       8.950 -35.224  -2.362  1.00 22.48      A    O
ATOM    676  OE2 GLU   144       9.503 -35.787  -0.307  1.00 19.26      A    O
ATOM    677  C   GLU   144       9.880 -40.392  -2.041  1.00 19.63      A    C
ATOM    678  O   GLU   144       8.907 -40.944  -1.536  1.00 20.55      A    O
ATOM    679  N   GLU   145      11.100 -40.514  -1.539  1.00 20.79      A    N
ATOM    680  CA  GLU   145      11.344 -41.370  -0.384  1.00 22.29      A    C
ATOM    681  CB  GLU   145      12.780 -41.881  -0.408  1.00 24.00      A    C
ATOM    682  CG  GLU   145      13.257 -42.460   0.904  1.00 25.67      A    C
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ATOM    683  CD  GLU   145      14.657 -41.994   1.229  1.00 27.32      A    C
ATOM    684  OE1 GLU   145      14.909 -40.770   1.121  1.00 29.46      A    O
ATOM    685  OE2 GLU   145      15.501 -42.843   1.578  1.00 25.95      A    O
ATOM    686  C   GLU   145      11.071 -40.648   0.934  1.00 22.03      A    C
ATOM    687  O   GLU   145      11.501 -39.512   1.141  1.00 21.79      A    O
ATOM    688  N   ASP   146      10.361 -41.330   1.826  1.00 21.77      A    N
ATOM    689  CA  ASP   146       9.805 -40.698   3.010  1.00 21.81      A    C
ATOM    690  CB  ASP   146       8.946 -41.693   3.792  1.00 23.57      A    C
ATOM    691  CG  ASP   146       8.061 -41.015   4.831  1.00 26.04      A    C
ATOM    692  OD1 ASP   146       7.680 -39.836   4.626  1.00 25.09      A    O
ATOM    693  OD2 ASP   146       7.735 -41.666   5.851  1.00 26.40      A    O
ATOM    694  C   ASP   146      10.901 -40.164   3.902  1.00 20.29      A    C
ATOM    695  O   ASP   146      11.944 -40.767   4.066  1.00 20.15      A    O
ATOM    696  N   SER   147      10.653 -39.000   4.472  1.00 20.99      A    N
ATOM    697  CA  SER   147      11.635 -38.327   5.320  1.00 21.78      A    C
ATOM    698  CB  SER   147      12.306 -37.175   4.553  1.00 21.45      A    C
ATOM    699  OG  SER   147      11.393 -36.616   3.622  1.00 21.30      A    O
ATOM    700  C   SER   147      10.917 -37.800   6.539  1.00 22.03      A    C
ATOM    701  O   SER   147       9.683 -37.841   6.594  1.00 22.28      A    O
ATOM    702  N   SER   148      11.682 -37.280   7.495  1.00 20.88      A    N
ATOM    703  CA  SER   148      11.097 -36.709   8.695  1.00 18.56      A    C
ATOM    704  CB  SER   148      12.030 -36.971   9.875  1.00 17.76      A    C
ATOM    705  OG  SER   148      11.817 -38.303  10.343  1.00 23.02      A    O
ATOM    706  C   SER   148      10.740 -35.220   8.591  1.00 17.96      A    C
ATOM    707  O   SER   148      11.243 -34.500   7.705  1.00 18.68      A    O
ATOM    708  N   VAL   149       9.817 -34.797   9.464  1.00 17.56      A    N
ATOM    709  CA  VAL   149       9.528 -33.382   9.732  1.00 14.60      A    C
ATOM    710  CB  VAL   149       8.123 -32.931   9.188  1.00 10.11      A    C
ATOM    711  CG1 VAL   149       8.098 -32.979   7.681  1.00  7.29      A    C
ATOM    712  CG2 VAL   149       7.022 -33.790   9.768  1.00  4.64      A    C
ATOM    713  C   VAL   149       9.565 -33.145  11.243  1.00 14.75      A    C
ATOM    714  O   VAL   149       9.483 -34.090  12.034  1.00 13.75      A    O
ATOM    715  N   PHE   150       9.687 -31.882  11.635  1.00 14.76      A    N
ATOM    716  CA  PHE   150       9.958 -31.564  13.020  1.00 14.98      A    C
ATOM    717  CB  PHE   150      11.455 -31.301  13.209  1.00 13.78      A    C
ATOM    718  CG  PHE   150      12.340 -32.416  12.706  1.00 13.73      A    C
ATOM    719  CD1 PHE   150      12.825 -32.408  11.399  1.00 13.23      A    C
ATOM    720  CD2 PHE   150      12.699 -33.464  13.544  1.00 12.73      A    C
ATOM    721  CE1 PHE   150      13.651 -33.424  10.940  1.00 13.20      A    C
ATOM    722  CE2 PHE   150      13.528 -34.488  13.093  1.00 12.62      A    C
ATOM    723  CZ  PHE   150      14.007 -34.468  11.789  1.00 13.49      A    C
ATOM    724  C   PHE   150       9.161 -30.358  13.493  1.00 15.59      A    C
ATOM    725  O   PHE   150       9.022 -29.371  12.769  1.00 15.48      A    O
ATOM    726  N   ALA   151       8.652 -30.462  14.721  1.00 16.70      A    N
ATOM    727  CA  ALA   151       7.941 -29.391  15.405  1.00 17.59      A    C
ATOM    728  CB  ALA   151       7.546 -29.861  16.800  1.00 14.66      A    C
ATOM    729  C   ALA   151       8.807 -28.134  15.499  1.00 20.08      A    C
ATOM    730  O   ALA   151       9.987 -28.214  15.863  1.00 21.40      A    O
ATOM    731  N   GLN   152       8.224 -26.974  15.185  1.00 21.45      A    N
ATOM    732  CA  GLN   152       8.999 -25.734  15.123  1.00 22.94      A    C
ATOM    733  CB  GLN   152       8.816 -25.094  13.751  1.00 22.61      A    C
ATOM    734  CG  GLN   152       9.251 -25.981  12.600  1.00 24.12      A    C
ATOM    735  CD  GLN   152      10.729 -26.298  12.639  1.00 24.23      A    C
ATOM    736  OE1 GLN   152      11.555 -25.426  12.900  1.00 25.38      A    O
ATOM    737  NE2 GLN   152      11.073 -27.553  12.384  1.00 25.68      A    N
ATOM    738  C   GLN   152       8.690 -24.693  16.212  1.00 24.95      A    C
ATOM    739  O   GLN   152       8.769 -23.483  15.892  1.00 25.70      A    O
ATOM    740  OXT GLN   152       8.403 -25.079  17.372  1.00 25.96      A    O
TER     741       GLN   152                                             A
ATOM    742  CB  SER   153      -2.118  -5.652  31.558  1.00 64.33      B    C
ATOM    743  OG  SER   153      -3.502  -5.729  31.243  1.00 65.73      B    O
ATOM    744  C   SER   153      -1.938  -7.936  30.526  1.00 60.48      B    C
ATOM    745  O   SER   153      -2.486  -9.027  30.714  1.00 61.28      B    O
ATOM    746  N   SER   153      -0.031  -6.953  31.819  1.00 62.19      B    N
ATOM    747  CA  SER   153      -1.516  -7.054  31.716  1.00 62.27      B    C
ATOM    748  N   ILE   154      -1.691  -7.442  29.312  1.00 56.98      B    N
ATOM    749  CA  ILE   154      -1.789  -8.241  28.096  1.00 53.64      B    C
ATOM    750  CB  ILE   154      -2.590  -7.497  26.997  1.00 54.07      B    C
ATOM    751  CG2 ILE   154      -2.566  -8.298  25.696  1.00 53.46      B    C
ATOM    752  CG1 ILE   154      -4.033  -7.284  27.459  1.00 54.70      B    C
ATOM    753  CD1 ILE   154      -4.702  -8.539  27.999  1.00 55.43      B    C
ATOM    754  C   ILE   154      -0.387  -8.536  27.576  1.00 50.51      B    C
ATOM    755  O   ILE   154       0.459  -7.638  27.493  1.00 51.05      B    O
ATOM    756  N   PRO   155      -0.124  -9.807  27.215  1.00 46.28      B    N
ATOM    757  CD  PRO   155      -1.077 -10.927  27.297  1.00 44.83      B    C
ATOM    758  CA  PRO   155       1.190 -10.235  26.719  1.00 42.26      B    C
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ATOM    759  CB  PRO   155       1.044 -11.747  26.515  1.00 43.54      B    C
ATOM    760  CG  PRO   155      -0.419 -12.012  26.469  1.00 43.77      B    C
ATOM    761  C   PRO   155       1.624  -9.511  25.468  1.00 38.35      B    C
ATOM    762  O   PRO   155       0.810  -9.280  24.581  1.00 37.59      B    O
ATOM    763  N   TRP   156       2.883  -9.073  25.464  1.00 35.05      B    N
ATOM    764  CA  TRP   156       3.404  -8.189  24.434  1.00 31.77      B    C
ATOM    765  CB  TRP   156       4.931  -8.188  24.492  1.00 30.82      B    C
ATOM    766  CG  TRP   156       5.560  -9.409  23.877  1.00 29.15      B    C
ATOM    767  CD2 TRP   156       5.935  -9.573  22.504  1.00 28.01      B    C
ATOM    768  CE2 TRP   156       6.429 -10.887  22.365  1.00 28.46      B    C
ATOM    769  CE3 TRP   156       5.893  -8.741  21.383  1.00 26.98      B    C
ATOM    770  CD1 TRP   156       5.845 -10.597  24.498  1.00 28.63      B    C
ATOM    771  NE1 TRP   156       6.367 -11.489  23.592  1.00 27.53      B    N
ATOM    772  CZ2 TRP   156       6.878 -11.380  21.145  1.00 27.62      B    C
ATOM    773  CZ3 TRP   156       6.337  -9.230  20.183  1.00 27.01      B    C
ATOM    774  CH2 TRP   156       6.821 -10.538  20.068  1.00 27.44      B    C
ATOM    775  C   TRP   156       2.945  -8.565  23.034  1.00 30.37      B    C
ATOM    776  O   TRP   156       2.745  -7.698  22.188  1.00 29.94      B    O
ATOM    777  N   ASN   157       2.790  -9.860  22.792  1.00 30.00      B    N
ATOM    778  CA  ASN   157       2.496 -10.358  21.461  1.00 30.04      B    C
ATOM    779  CB  ASN   157       2.841 -11.844  21.387  1.00 30.90      B    C
ATOM    780  CG  ASN   157       2.297 -12.631  22.566  1.00 32.76      B    C
ATOM    781  OD1 ASN   157       2.678 -12.393  23.720  1.00 32.26      B    O
ATOM    782  ND2 ASN   157       1.406 -13.582  22.282  1.00 32.40      B    N
ATOM    783  C   ASN   157       1.042 -10.132  21.050  1.00 29.16      B    C
ATOM    784  O   ASN   157       0.759  -9.778  19.905  1.00 28.18      B    O
ATOM    785  N   LEU   158       0.118 -10.340  21.979  1.00 28.71      B    N
ATOM    786  CA  LEU   158      -1.275 -10.005  21.720  1.00 29.10      B    C
ATOM    787  CB  LEU   158      -2.159 -10.499  22.869  1.00 26.66      B    C
ATOM    788  CG  LEU   158      -2.299 -12.012  23.001  1.00 23.99      B    C
ATOM    789  CD1 LEU   158      -3.369 -12.316  24.011  1.00 22.11      B    C
ATOM    790  CD2 LEU   158      -2.656 -12.624  21.661  1.00 22.63      B    C
ATOM    791  C   LEU   158      -1.380  -8.493  21.595  1.00 30.36      B    C
ATOM    792  O   LEU   158      -2.015  -7.956  20.690  1.00 27.77      B    O
ATOM    793  N   GLU   159      -0.734  -7.818  22.531  1.00 34.34      B    N
ATOM    794  CA  GLU   159      -0.599  -6.377  22.499  1.00 38.03      B    C
ATOM    795  CB  GLU   159       0.373  -5.958  23.596  1.00 42.36      B    C
ATOM    796  CG  GLU   159       0.570  -4.472  23.754  1.00 49.60      B    C
ATOM    797  CD  GLU   159       1.497  -4.146  24.917  1.00 54.93      B    C
ATOM    798  OE1 GLU   159       1.838  -5.078  25.690  1.00 56.11      B    O
ATOM    799  OE2 GLU   159       1.884  -2.960  25.053  1.00 57.72      B    O
ATOM    800  C   GLU   159      -0.081  -5.946  21.133  1.00 37.92      B    C
ATOM    801  O   GLU   159      -0.657  -5.065  20.497  1.00 38.35      B    O
ATOM    802  N   ARG   160       0.993  -6.595  20.685  1.00 37.80      B    N
ATOM    803  CA  ARG   160       1.690  -6.234  19.451  1.00 37.18      B    C
ATOM    804  CB  ARG   160       2.871  -7.182  19.217  1.00 38.09      B    C
ATOM    805  CG  ARG   160       3.727  -6.822  18.011  1.00 40.19      B    C
ATOM    806  CD  ARG   160       4.297  -5.430  18.181  1.00 43.31      B    C
ATOM    807  NE  ARG   160       4.594  -5.181  19.590  1.00 47.57      B    N
ATOM    808  CZ  ARG   160       5.820  -5.112  20.106  1.00 48.38      B    C
ATOM    809  NH1 ARG   160       5.986  -4.890  21.409  1.00 48.57      B    N
ATOM    810  NH2 ARG   160       6.879  -5.250  19.321  1.00 47.72      B    N
ATOM    811  C   ARG   160       0.789  -6.255  18.220  1.00 36.61      B    C
ATOM    812  O   ARG   160       0.748  -5.290  17.457  1.00 35.07      B    O
ATOM    813  N   ILE   161       0.071  -7.361  18.034  1.00 37.09      B    N
ATOM    814  CA  ILE   161      -0.735  -7.569  16.832  1.00 36.70      B    C
ATOM    815  CB  ILE   161      -1.083  -9.056  16.649  1.00 34.95      B    C
ATOM    816  CG2 ILE   161       0.167  -9.895  16.787  1.00 34.16      B    C
ATOM    817  CG1 ILE   161      -2.096  -9.495  17.698  1.00 31.99      B    C
ATOM    818  CD1 ILE   161      -2.663 -10.865  17.425  1.00 31.11      B    C
ATOM    819  C   ILE   161      -2.037  -6.760  16.842  1.00 37.39      B    C
ATOM    820  O   ILE   161      -2.845  -6.851  15.922  1.00 36.70      B    O
ATOM    821  N   THR   162      -2.228  -5.972  17.893  1.00 38.96      B    N
ATOM    822  CA  THR   162      -3.346  -5.046  17.977  1.00 39.63      B    C
ATOM    823  CB  THR   162      -3.960  -5.062  19.366  1.00 37.84      B    C
ATOM    824  OG1 THR   162      -4.768  -6.230  19.511  1.00 36.55      B    O
ATOM    825  CG2 THR   162      -4.795  -3.828  19.588  1.00 37.94      B    C
ATOM    826  C   THR   162      -2.896  -3.629  17.696  1.00 42.17      B    C
ATOM    827  O   THR   162      -2.007  -3.116  18.373  1.00 43.46      B    O
ATOM    828  N   PRO   163      -3.507  -2.973  16.695  1.00 44.52      B    N
ATOM    829  CD  PRO   163      -4.456  -3.541  15.722  1.00 44.90      B    C
ATOM    830  CA  PRO   163      -3.231  -1.557  16.428  1.00 46.29      B    C
ATOM    831  CB  PRO   163      -3.865  -1.316  15.062  1.00 45.47      B    C
ATOM    832  CG  PRO   163      -4.953  -2.330  14.977  1.00 45.09      B    C
ATOM    833  C   PRO   163      -3.824  -0.652  17.508  1.00 48.53      B    C
ATOM    834  O   PRO   163      -4.773  -1.027  18.198  1.00 47.74      B    O
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ATOM    835  N   PRO   164      -3.266   0.559  17.657  1.00 50.33      B    N
ATOM    836  CD  PRO   164      -2.151   1.049  16.825  1.00 51.64      B    C
ATOM    837  CA  PRO   164      -3.672   1.546  18.666  1.00 50.37      B    C
ATOM    838  CB  PRO   164      -2.839   2.779  18.314  1.00 50.83      B    C
ATOM    839  CG  PRO   164      -1.638   2.229  17.606  1.00 51.59      B    C
ATOM    840  C   PRO   164      -5.170   1.845  18.648  1.00 49.88      B    C
ATOM    841  O   PRO   164      -5.784   2.055  19.696  1.00 49.10      B    O
ATOM    842  N   GLY   176     -14.144 -13.280  18.361  1.00 32.04      B    N
ATOM    843  CA  GLY   176     -12.995 -13.701  17.570  1.00 33.60      B    C
ATOM    844  C   GLY   176     -13.330 -14.191  16.169  1.00 33.76      B    C
ATOM    845  O   GLY   176     -14.095 -13.548  15.451  1.00 36.77      B    O
ATOM    846  N   GLY   177     -12.770 -15.327  15.766  1.00 32.58      B    N
ATOM    847  CA  GLY   177     -12.976 -15.794  14.401  1.00 31.46      B    C
ATOM    848  C   GLY   177     -14.045 -16.865  14.275  1.00 30.95      B    C
ATOM    849  O   GLY   177     -13.760 -18.006  13.924  1.00 30.29      B    O
ATOM    850  N   SER   178     -15.288 -16.490  14.552  1.00 30.81      B    N
ATOM    851  CA  SER   178     -16.381 -17.452  14.695  1.00 30.89      B    C
ATOM    852  CB  SER   178     -17.619 -16.729  15.221  1.00 30.25      B    C
ATOM    853  OG  SER   178     -17.669 -15.393  14.738  1.00 32.95      B    O
ATOM    854  C   SER   178     -16.747 -18.256  13.437  1.00 30.60      B    C
ATOM    855  O   SER   178     -17.146 -19.414  13.539  1.00 31.32      B    O
ATOM    856  N   LEU   179     -16.613 -17.655  12.258  1.00 29.16      B    N
ATOM    857  CA  LEU   179     -16.991 -18.327  11.022  1.00 28.05      B    C
ATOM    858  CB  LEU   179     -17.207 -17.306   9.900  1.00 27.27      B    C
ATOM    859  CG  LEU   179     -18.273 -16.239  10.143  1.00 26.59      B    C
ATOM    860  CD1 LEU   179     -18.583 -15.514   8.855  1.00 22.84      B    C
ATOM    861  CD2 LEU   179     -19.514 -16.895  10.699  1.00 26.13      B    C
ATOM    862  C   LEU   179     -15.968 -19.359  10.554  1.00 28.95      B    C
ATOM    863  O   LEU   179     -16.306 -20.296   9.832  1.00 29.75      B    O
ATOM    864  N   VAL   180     -14.709 -19.194  10.939  1.00 29.57      B    N
ATOM    865  CA  VAL   180     -13.690 -20.076  10.392  1.00 28.73      B    C
ATOM    866  CB  VAL   180     -12.380 -19.321  10.040  1.00 29.20      B    C
ATOM    867  CG1 VAL   180     -12.692 -17.928   9.531  1.00 28.98      B    C
ATOM    868  CG2 VAL   180     -11.467 -19.283  11.232  1.00 30.37      B    C
ATOM    869  C   VAL   180     -13.350 -21.229  11.329  1.00 28.24      B    C
ATOM    870  O   VAL   180     -13.657 -21.211  12.525  1.00 26.19      B    O
ATOM    871  N   GLU   181     -12.718 -22.240  10.746  1.00 29.33      B    N
ATOM    872  CA  GLU   181     -12.366 -23.461  11.439  1.00 30.53      B    C
ATOM    873  CB  GLU   181     -13.206 -24.615  10.894  1.00 32.40      B    C
ATOM    874  CG  GLU   181     -13.309 -25.810  11.806  1.00 37.22      B    C
ATOM    875  CD  GLU   181     -14.641 -26.513  11.661  1.00 40.66      B    C
ATOM    876  OE1 GLU   181     -14.661 -27.688  11.235  1.00 44.08      B    O
ATOM    877  OE2 GLU   181     -15.675 -25.885  11.971  1.00 42.45      B    O
ATOM    878  C   GLU   181     -10.881 -23.710  11.186  1.00 29.82      B    C
ATOM    879  O   GLU   181     -10.433 -23.763  10.036  1.00 28.64      B    O
ATOM    880  N   VAL   182     -10.120 -23.844  12.267  1.00 29.16      B    N
ATOM    881  CA  VAL   182      -8.683 -24.032  12.162  1.00 27.69      B    C
ATOM    882  CB  VAL   182      -7.935 -23.145  13.172  1.00 26.22      B    C
ATOM    883  CG1 VAL   182      -6.457 -23.419  13.117  1.00 25.33      B    C
ATOM    884  CG2 VAL   182      -8.186 -21.694  12.847  1.00 26.31      B    C
ATOM    885  C   VAL   182      -8.309 -25.483  12.384  1.00 27.38      B    C
ATOM    886  O   VAL   182      -8.629 -26.073  13.415  1.00 26.94      B    O
ATOM    887  N   TYR   183      -7.644 -26.058  11.391  1.00 28.09      B    N
ATOM    888  CA  TYR   183      -7.113 -27.402  11.515  1.00 29.37      B    C
ATOM    889  CB  TYR   183      -7.221 -28.135  10.183  1.00 29.70      B    C
ATOM    890  CG  TYR   183      -8.562 -28.795   9.965  1.00 31.89      B    C
ATOM    891  CD1 TYR   183      -9.592 -28.132   9.300  1.00 31.43      B    C
ATOM    892  CE1 TYR   183     -10.818 -28.743   9.094  1.00 31.92      B    C
ATOM    893  CD2 TYR   183      -8.797 -30.087  10.416  1.00 32.07      B    C
ATOM    894  CE2 TYR   183     -10.014 -30.704  10.213  1.00 32.69      B    C
ATOM    895  CZ  TYR   183     -11.024 -30.032   9.554  1.00 33.05      B    C
ATOM    896  OH  TYR   183     -12.237 -30.666   9.360  1.00 34.31      B    O
ATOM    897  C   TYR   183      -5.661 -27.315  11.944  1.00 30.17      B    C
ATOM    898  O   TYR   183      -4.868 -26.596  11.339  1.00 31.22      B    O
ATOM    899  N   LEU   184      -5.326 -28.045  12.999  1.00 30.04      B    N
ATOM    900  CA  LEU   184      -3.963 -28.099  13.502  1.00 30.29      B    C
ATOM    901  CB  LEU   184      -3.959 -27.740  14.991  1.00 30.85      B    C
ATOM    902  CG  LEU   184      -2.652 -27.812  15.786  1.00 32.45      B    C
ATOM    903  CD1 LEU   184      -1.684 -26.740  15.303  1.00 32.56      B    C
ATOM    904  CD2 LEU   184      -2.956 -27.627  17.270  1.00 31.96      B    C
ATOM    905  C   LEU   184      -3.380 -29.499  13.294  1.00 30.49      B    C
ATOM    906  O   LEU   184      -3.897 -30.484  13.819  1.00 30.53      B    O
ATOM    907  N   LEU   185      -2.312 -29.594  12.515  1.00 30.52      B    N
ATOM    908  CA  LEU   185      -1.579 -30.847  12.432  1.00 32.04      B    C
ATOM    909  CB  LEU   185      -1.178 -31.162  10.991  1.00 32.70      B    C
ATOM    910  CG  LEU   185      -2.326 -31.422  10.023  1.00 33.68      B    C
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ATOM    911  CD1 LEU   185      -2.960 -30.097   9.644  1.00 34.74      B    C
ATOM    912  CD2 LEU   185      -1.813 -32.130   8.788  1.00 33.81      B    C
ATOM    913  C   LEU   185      -0.340 -30.715  13.284  1.00 32.10      B    C
ATOM    914  O   LEU   185       0.518 -29.875  13.016  1.00 33.06      B    O
ATOM    915  N   ASP   186      -0.244 -31.547  14.312  1.00 32.16      B    N
ATOM    916  CA  ASP   186       0.716 -31.296  15.365  1.00 33.03      B    C
ATOM    917  CB  ASP   186       0.299 -30.036  16.118  1.00 35.89      B    C
ATOM    918  CG  ASP   186       1.439 -29.410  16.876  1.00 40.10      B    C
ATOM    919  OD1 ASP   186       2.197 -28.616  16.272  1.00 41.27      B    O
ATOM    920  OD2 ASP   186       1.575 -29.714  18.082  1.00 44.20      B    O
ATOM    921  C   ASP   186       0.797 -32.485  16.315  1.00 32.10      B    C
ATOM    922  O   ASP   186       0.362 -33.583  15.981  1.00 33.15      B    O
ATOM    923  N   THR   187       1.365 -32.265  17.494  1.00 30.56      B    N
ATOM    924  CA  THR   187       1.426 -33.291  18.525  1.00 29.30      B    C
ATOM    925  CB  THR   187       2.265 -32.840  19.706  1.00 29.76      B    C
ATOM    926  OG1 THR   187       1.568 -31.790  20.387  1.00 28.42      B    O
ATOM    927  CG2 THR   187       3.625 -32.325  19.235  1.00 28.84      B    C
ATOM    928  C   THR   187       0.021 -33.501  19.042  1.00 29.16      B    C
ATOM    929  O   THR   187      -0.934 -32.961  18.496  1.00 30.34      B    O
ATOM    930  N   SER   188      -0.101 -34.279  20.109  1.00 29.21      B    N
ATOM    931  CA  SER   188      -1.387 -34.471  20.756  1.00 28.11      B    C
ATOM    932  CB  SER   188      -1.352 -35.725  21.637  1.00 25.78      B    C
ATOM    933  OG  SER   188      -0.424 -35.577  22.688  1.00 23.67      B    O
ATOM    934  C   SER   188      -1.703 -33.237  21.594  1.00 29.15      B    C
ATOM    935  O   SER   188      -0.801 -32.520  22.020  1.00 29.20      B    O
ATOM    936  N   ILE   189      -2.991 -32.993  21.815  1.00 31.00      B    N
ATOM    937  CA  ILE   189      -3.458 -31.824  22.560  1.00 31.96      B    C
ATOM    938  CB  ILE   189      -4.547 -31.091  21.767  1.00 32.72      B    C
ATOM    939  CG2 ILE   189      -5.002 -29.863  22.512  1.00 34.17      B    C
ATOM    940  CG1 ILE   189      -4.000 -30.715  20.393  1.00 34.80      B    C
ATOM    941  CD1 ILE   189      -2.550 -30.250  20.422  1.00 34.94      B    C
ATOM    942  C   ILE   189      -4.033 -32.223  23.915  1.00 31.62      B    C
ATOM    943  O   ILE   189      -4.439 -33.365  24.105  1.00 32.27      B    O
ATOM    944  N   GLN   190      -4.063 -31.292  24.860  1.00 32.36      B    N
ATOM    945  CA  GLN   190      -4.861 -31.489  26.064  1.00 33.98      B    C
ATOM    946  CB  GLN   190      -4.083 -31.063  27.305  1.00 32.89      B    C
ATOM    947  CG  GLN   190      -4.502 -31.817  28.548  1.00 36.37      B    C
ATOM    948  CD  GLN   190      -5.107 -30.914  29.599  1.00 39.51      B    C
ATOM    949  OE1 GLN   190      -6.187 -30.364  29.403  1.00 42.37      B    O
ATOM    950  NE2 GLN   190      -4.410 -30.750  30.726  1.00 40.58      B    N
ATOM    951  C   GLN   190      -6.135 -30.666  25.936  1.00 34.78      B    C
ATOM    952  O   GLN   190      -6.184 -29.509  26.356  1.00 35.39      B    O
ATOM    953  N   SER   191      -7.162 -31.280  25.353  1.00 35.46      B    N
ATOM    954  CA  SER   191      -8.255 -30.546  24.721  1.00 36.57      B    C
ATOM    955  CB  SER   191      -9.034 -31.458  23.787  1.00 36.91      B    C
ATOM    956  OG  SER   191      -9.937 -32.247  24.540  1.00 37.76      B    O
ATOM    957  C   SER   191      -9.231 -29.962  25.718  1.00 37.07      B    C
ATOM    958  O   SER   191     -10.183 -29.285  25.333  1.00 36.92      B    O
ATOM    959  N   ASP   192      -9.010 -30.245  26.995  1.00 37.93      B    N
ATOM    960  CA  ASP   192      -9.853 -29.681  28.032  1.00 38.96      B    C
ATOM    961  CB  ASP   192     -10.593 -30.797  28.784  1.00 43.84      B    C
ATOM    962  CG  ASP   192      -9.655 -31.797  29.420  1.00 47.60      B    C
ATOM    963  OD1 ASP   192      -8.434 -31.704  29.155  1.00 50.20      B    O
ATOM    964  OD2 ASP   192     -10.142 -32.669  30.182  1.00 48.68      B    O
ATOM    965  C   ASP   192      -9.078 -28.793  29.001  1.00 36.46      B    C
ATOM    966  O   ASP   192      -9.563 -28.451  30.078  1.00 35.83      B    O
ATOM    967  N   HIS   193      -7.872 -28.411  28.611  1.00 34.81      B    N
ATOM    968  CA  HIS   193      -7.174 -27.356  29.319  1.00 34.03      B    C
ATOM    969  CB  HIS   193      -5.859 -27.022  28.619  1.00 33.96      B    C
ATOM    970  CG  HIS   193      -5.066 -25.959  29.308  1.00 33.51      B    C
ATOM    971  CD2 HIS   193      -3.978 -26.038  30.108  1.00 33.22      B    C
ATOM    972  ND1 HIS   193      -5.379 -24.621  29.215  1.00 33.43      B    N
ATOM    973  CE1 HIS   193      -4.517 -23.920  29.930  1.00 33.67      B    C
ATOM    974  NE2 HIS   193      -3.658 -24.756  30.483  1.00 33.30      B    N
ATOM    975  C   HIS   193      -8.089 -26.138  29.309  1.00 33.86      B    C
ATOM    976  O   HIS   193      -8.669 -25.795  28.274  1.00 34.18      B    O
ATOM    977  N   ARG   194      -8.214 -25.488  30.461  1.00 32.52      B    N
ATOM    978  CA  ARG   194      -9.264 -24.507  30.662  1.00 31.10      B    C
ATOM    979  CB  ARG   194      -9.101 -23.830  32.026  1.00 29.16      B    C
ATOM    980  CG  ARG   194      -8.795 -22.340  31.959  1.00 28.99      B    C
ATOM    981  CD  ARG   194      -9.657 -21.522  32.934  1.00 26.01      B    C
ATOM    982  NE  ARG   194      -8.938 -21.075  34.132  1.00 23.97      B    N
ATOM    983  CZ  ARG   194      -7.921 -20.212  34.126  1.00 23.47      B    C
ATOM    984  NH1 ARG   194      -7.334 -19.864  35.262  1.00 23.18      B    N
ATOM    985  NH2 ARG   194      -7.479 -19.699  32.984  1.00 23.23      B    N
ATOM    986  C   ARG   194      -9.235 -23.471  29.552  1.00 31.87      B    C
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ATOM    987  O   ARG   194     -10.245 -22.835  29.249  1.00 32.31      B    O
ATOM    988  N   GLU   195      -8.073 -23.327  28.930  1.00 31.93      B    N
ATOM    989  CA  GLU   195      -7.834 -22.250  27.981  1.00 31.02      B    C
ATOM    990  CB  GLU   195      -6.324 -22.075  27.807  1.00 31.22      B    C
ATOM    991  CG  GLU   195      -5.917 -21.036  26.791  1.00 32.56      B    C
ATOM    992  CD  GLU   195      -5.879 -19.625  27.358  1.00 33.36      B    C
ATOM    993  OE1 GLU   195      -6.529 -19.363  28.404  1.00 31.05      B    O
ATOM    994  OE2 GLU   195      -5.191 -18.782  26.736  1.00 32.52      B    O
ATOM    995  C   GLU   195      -8.506 -22.462  26.617  1.00 30.14      B    C
ATOM    996  O   GLU   195      -8.857 -21.496  25.939  1.00 29.15      B    O
ATOM    997  N   ILE   196      -8.690 -23.720  26.221  1.00 29.91      B    N
ATOM    998  CA  ILE   196      -9.100 -24.037  24.855  1.00 29.25      B    C
ATOM    999  CB  ILE   196      -7.951 -24.687  24.064  1.00 27.84      B    C
ATOM   1000  CG2 ILE   196      -6.854 -23.670  23.801  1.00 26.24      B    C
ATOM   1001  CG1 ILE   196      -7.436 -25.909  24.834  1.00 26.53      B    C
ATOM   1002  CD1 ILE   196      -6.554 -26.819  24.033  1.00 24.05      B    C
ATOM   1003  C   ILE   196     -10.274 -24.999  24.811  1.00 30.60      B    C
ATOM   1004  O   ILE   196     -10.948 -25.135  23.788  1.00 30.51      B    O
ATOM   1005  N   GLU   197     -10.512 -25.686  25.916  1.00 32.24      B    N
ATOM   1006  CA  GLU   197     -11.490 -26.759  25.910  1.00 34.74      B    C
ATOM   1007  CB  GLU   197     -11.610 -27.350  27.309  1.00 35.54      B    C
ATOM   1008  CG  GLU   197     -12.153 -26.413  28.324  1.00 38.11      B    C
ATOM   1009  CD  GLU   197     -13.648 -26.430  28.324  1.00 41.53      B    C
ATOM   1010  OE1 GLU   197     -14.254 -25.395  28.669  1.00 45.11      B    O
ATOM   1011  OE2 GLU   197     -14.219 -27.484  27.971  1.00 43.30      B    O
ATOM   1012  C   GLU   197     -12.855 -26.287  25.413  1.00 34.89      B    C
ATOM   1013  O   GLU   197     -13.359 -25.251  25.844  1.00 34.37      B    O
ATOM   1014  N   GLY   198     -13.446 -27.046  24.497  1.00 34.64      B    N
ATOM   1015  CA  GLY   198     -14.707 -26.631  23.918  1.00 34.42      B    C
ATOM   1016  C   GLY   198     -14.534 -25.954  22.570  1.00 35.86      B    C
ATOM   1017  O   GLY   198     -15.436 -26.002  21.732  1.00 36.41      B    O
ATOM   1018  N   ARG   199     -13.383 -25.318  22.354  1.00 36.46      B    N
ATOM   1019  CA  ARG   199     -13.081 -24.694  21.066  1.00 37.77      B    C
ATOM   1020  CB  ARG   199     -12.258 -23.416  21.257  1.00 39.47      B    C
ATOM   1021  CG  ARG   199     -12.909 -22.372  22.129  1.00 41.61      B    C
ATOM   1022  CD  ARG   199     -11.888 -21.766  23.062  1.00 43.31      B    C
ATOM   1023  NE  ARG   199     -12.472 -20.711  23.877  1.00 45.69      B    N
ATOM   1024  CZ  ARG   199     -12.610 -19.453  23.475  1.00 48.05      B    C
ATOM   1025  NH1 ARG   199     -13.153 -18.552  24.283  1.00 49.22      B    N
ATOM   1026  NH2 ARG   199     -12.208 -19.095  22.262  1.00 48.95      B    N
ATOM   1027  C   ARG   199     -12.275 -25.673  20.242  1.00 37.48      B    C
ATOM   1028  O   ARG   199     -12.100 -25.507  19.042  1.00 37.33      B    O
ATOM   1029  N   VAL   200     -11.768 -26.692  20.916  1.00 38.28      B    N
ATOM   1030  CA  VAL   200     -10.894 -27.662  20.286  1.00 39.41      B    C
ATOM   1031  CB  VAL   200      -9.503 -27.665  20.976  1.00 40.93      B    C
ATOM   1032  CG1 VAL   200      -8.662 -28.836  20.488  1.00 40.39      B    C
ATOM   1033  CG2 VAL   200      -8.791 -26.346  20.688  1.00 40.81      B    C
ATOM   1034  C   VAL   200     -11.516 -29.051  20.361  1.00 39.27      B    C
ATOM   1035  O   VAL   200     -11.652 -29.628  21.443  1.00 39.35      B    O
ATOM   1036  N   MET   201     -11.904 -29.565  19.199  1.00 39.35      B    N
ATOM   1037  CA  MET   201     -12.387 -30.930  19.063  1.00 38.47      B    C
ATOM   1038  CB  MET   201     -13.537 -30.968  18.057  1.00 39.97      B    C
ATOM   1039  CG  MET   201     -14.150 -32.335  17.862  1.00 43.51      B    C
ATOM   1040  SD  MET   201     -13.407 -33.296  16.515  1.00 49.43      B    S
ATOM   1041  CE  MET   201     -13.750 -34.985  17.094  1.00 46.63      B    C
ATOM   1042  C   MET   201     -11.233 -31.801  18.575  1.00 37.52      B    C
ATOM   1043  O   MET   201     -10.835 -31.727  17.414  1.00 37.13      B    O
ATOM   1044  N   VAL   202     -10.680 -32.612  19.467  1.00 36.78      B    N
ATOM   1045  CA  VAL   202      -9.624 -33.533  19.076  1.00 35.76      B    C
ATOM   1046  CB  VAL   202      -8.927 -34.157  20.303  1.00 34.80      B    C
ATOM   1047  CG1 VAL   202      -8.212 -35.428  19.905  1.00 33.07      B    C
ATOM   1048  CG2 VAL   202      -7.934 -33.173  20.888  1.00 33.22      B    C
ATOM   1049  C   VAL   202     -10.226 -34.641  18.230  1.00 36.18      B    C
ATOM   1050  O   VAL   202     -11.025 -35.447  18.716  1.00 35.82      B    O
ATOM   1051  N   THR   203      -9.848 -34.668  16.956  1.00 36.30      B    N
ATOM   1052  CA  THR   203     -10.380 -35.662  16.041  1.00 35.62      B    C
ATOM   1053  CB  THR   203     -10.067 -35.316  14.568  1.00 34.74      B    C
ATOM   1054  OG1 THR   203      -8.719 -35.682  14.257  1.00 34.72      B    O
ATOM   1055  CG2 THR   203     -10.240 -33.821  14.334  1.00 33.32      B    C
ATOM   1056  C   THR   203      -9.745 -36.993  16.389  1.00 36.32      B    C
ATOM   1057  O   THR   203      -9.147 -37.151  17.447  1.00 37.09      B    O
ATOM   1058  N   ASP   204      -9.881 -37.956  15.497  1.00 37.59      B    N
ATOM   1059  CA  ASP   204      -9.461 -39.315  15.786  1.00 38.74      B    C
ATOM   1060  CB  ASP   204     -10.615 -40.264  15.511  1.00 42.30      B    C
ATOM   1061  CG  ASP   204     -11.162 -40.090  14.112  1.00 47.00      B    C
ATOM   1062  OD1 ASP   204     -10.783 -40.892  13.228  1.00 50.09      B    O
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ATOM   1063  OD2 ASP   204     -11.953 -39.137  13.891  1.00 48.97       B    O
ATOM   1064  C   ASP   204      -8.293 -39.671  14.886  1.00 37.76       B    C
ATOM   1065  O   ASP   204      -7.862 -40.823  14.846  1.00 38.21       B    O
ATOM   1066  N   PHE   205      -7.790 -38.684  14.151  1.00 35.84       B    N
ATOM   1067  CA  PHE   205      -6.668 -38.913  13.249  1.00 33.48       B    C
ATOM   1068  CB  PHE   205      -6.603 -37.818  12.190  1.00 31.69       B    C
ATOM   1069  CG  PHE   205      -5.544 -38.049  11.166  1.00 31.35       B    C
ATOM   1070  CD1 PHE   205      -4.288 -37.502  11.317  1.00 31.19       B    C
ATOM   1071  CD2 PHE   205      -5.798 -38.827  10.051  1.00 32.23       B    C
ATOM   1072  CE1 PHE   205      -3.303 -37.726  10.371  1.00 31.97       B    C
ATOM   1073  CE2 PHE   205      -4.813 -39.052   9.102  1.00 32.26       B    C
ATOM   1074  CZ  PHE   205      -3.568 -38.502   9.264  1.00 30.67       B    C
ATOM   1075  C   PHE   205      -5.314 -39.001  13.959  1.00 32.69       B    C
ATOM   1076  O   PHE   205      -4.991 -38.201  14.842  1.00 32.36       B    O
ATOM   1077  N   GLU   206      -4.515 -39.978  13.563  1.00 31.16       B    N
ATOM   1078  CA  GLU   206      -3.160 -40.042  14.060  1.00 30.22       B    C
ATOM   1079  CB  GLU   206      -3.156 -40.639  15.456  1.00 30.05       B    C
ATOM   1080  CG  GLU   206      -1.784 -40.771  16.058  1.00 32.36       B    C
ATOM   1081  CD  GLU   206      -1.797 -41.638  17.292  1.00 35.04       B    C
ATOM   1082  OE1 GLU   206      -1.549 -41.109  18.397  1.00 38.43       B    O
ATOM   1083  OE2 GLU   206      -2.063 -42.850  17.160  1.00 34.75       B    O
ATOM   1084  C   GLU   206      -2.250 -40.843  13.142  1.00 28.87       B    C
ATOM   1085  O   GLU   206      -2.529 -41.991  12.825  1.00 27.95       B    O
ATOM   1086  N   ASN   207      -1.163 -40.213  12.712  1.00 29.34       B    N
ATOM   1087  CA  ASN   207      -0.115 -40.894  11.966  1.00 29.09       B    C
ATOM   1088  CB  ASN   207      -0.283 -40.651  10.462  1.00 29.34       B    C
ATOM   1089  CG  ASN   207       0.661 -41.504   9.620  1.00 28.97       B    C
ATOM   1090  OD1 ASN   207       0.231 -42.440   8.961  1.00 27.55       B    O
ATOM   1091  ND2 ASN   207       1.956 -41.175   9.643  1.00 30.27       B    N
ATOM   1092  C   ASN   207       1.249 -40.382  12.415  1.00 28.09       B    C
ATOM   1093  O   ASN   207       1.760 -39.399  11.878  1.00 29.19       B    O
ATOM   1094  N   VAL   208       1.835 -41.057  13.397  1.00 26.80       B    N
ATOM   1095  CA  VAL   208       3.126 -40.654  13.925  1.00 25.13       B    C
ATOM   1096  CB  VAL   208       2.987 -40.135  15.371  1.00 23.53       B    C
ATOM   1097  CG1 VAL   208       2.211 -38.842  15.388  1.00 22.53       B    C
ATOM   1098  CG2 VAL   208       2.278 -41.159  16.219  1.00 21.79       B    C
ATOM   1099  C   VAL   208       4.127 -41.805  13.892  1.00 26.28       B    C
ATOM   1100  O   VAL   208       3.752 -42.969  13.992  1.00 26.48       B    O
ATOM   1101  N   PRO   209       5.418 -41.482  13.722  1.00 28.18       B    N
ATOM   1102  CD  PRO   209       5.845 -40.119  13.351  1.00 29.06       B    C
ATOM   1103  CA  PRO   209       6.562 -42.394  13.827  1.00 30.05       B    C
ATOM   1104  CB  PRO   209       7.692 -41.608  13.190  1.00 28.79       B    C
ATOM   1105  CG  PRO   209       7.339 -40.177  13.468  1.00 26.64       B    C
ATOM   1106  C   PRO   209       6.872 -42.725  15.280  1.00 33.78       B    C
ATOM   1107  O   PRO   209       6.671 -41.897  16.166  1.00 34.02       B    O
ATOM   1108  N   GLU   210       7.378 -43.924  15.529  1.00 38.83       B    N
ATOM   1109  CA  GLU   210       7.634 -44.337  16.899  1.00 44.60       B    C
ATOM   1110  CB  GLU   210       8.115 -45.777  16.947  1.00 46.99       B    C
ATOM   1111  CG  GLU   210       7.149 -46.753  16.350  1.00 52.51       B    C
ATOM   1112  CD  GLU   210       7.807 -48.078  16.052  1.00 56.68       B    C
ATOM   1113  OE1 GLU   210       8.749 -48.448  16.791  1.00 58.71       B    O
ATOM   1114  OE2 GLU   210       7.390 -48.744  15.077  1.00 58.58       B    O
ATOM   1115  C   GLU   210       8.682 -43.450  17.531  1.00 46.80       B    C
ATOM   1116  O   GLU   210       9.615 -42.998  16.867  1.00 45.67       B    O
ATOM   1117  N   GLU   211       8.532 -43.210  18.823  1.00 50.25       B    N
ATOM   1118  CA  GLU   211       9.508 -42.412  19.545  1.00 53.81       B    C
ATOM   1119  CB  GLU   211       9.122 -42.343  21.020  1.00 54.42       B    C
ATOM   1120  CG  GLU   211       7.641 -42.600  21.242  1.00 56.19       B    C
ATOM   1121  CD  GLU   211       6.791 -41.386  20.950  1.00 56.76       B    C
ATOM   1122  OE1 GLU   211       7.332 -40.269  21.041  1.00 58.23       B    O
ATOM   1123  OE2 GLU   211       5.589 -41.543  20.631  1.00 55.21       B    O
ATOM   1124  C   GLU   211      10.872 -43.060  19.410  1.00 55.25       B    C
ATOM   1125  O   GLU   211      10.981 -44.286  19.400  1.00 55.73       B    O
ATOM   1126  N   ASP   212      11.907 -42.237  19.296  1.00 57.47       B    N
ATOM   1127  CA  ASP   212      13.257 -42.726  19.497  1.00 59.60       B    C
ATOM   1128  CB  ASP   212      13.335 -43.386  20.870  1.00 61.46       B    C
ATOM   1129  CG  ASP   212      14.753 -43.585  21.348  1.00 63.54       B    C
ATOM   1130  OD1 ASP   212      15.701 -43.219  20.613  1.00 65.22       B    O
ATOM   1131  OD2 ASP   212      14.911 -44.119  22.468  1.00 65.41       B    O
ATOM   1132  C   ASP   212      13.595 -43.735  18.407  1.00 61.25       B    C
ATOM   1133  O   ASP   212      14.004 -43.364  17.310  1.00 62.44       B    O
ATOM   1134  N   LYS   222       5.879 -33.583  27.994  1.00 46.08       B    N
ATOM   1135  CA  LYS   222       4.625 -34.186  27.575  1.00 46.76       B    C
ATOM   1136  CB  LYS   222       3.455 -33.569  28.341  1.00 47.87       B    C
ATOM   1137  CG  LYS   222       3.481 -33.867  29.823  1.00 50.38       B    C
ATOM   1138  CD  LYS   222       2.205 -33.438  30.501  1.00 52.96       B    C
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ATOM   1139  CE  LYS   222       2.195 -33.878  31.954  1.00 55.83      B    C
ATOM   1140  NZ  LYS   222       1.005 -33.423  32.731  1.00 59.69      B    N
ATOM   1141  C   LYS   222       4.382 -34.040  26.079  1.00 45.41      B    C
ATOM   1142  O   LYS   222       4.825 -33.080  25.445  1.00 45.49      B    O
ATOM   1143  N   CYS   223       3.646 -35.003  25.540  1.00 43.53      B    N
ATOM   1144  CA  CYS   223       3.327 -35.050  24.125  1.00 41.93      B    C
ATOM   1145  C   CYS   223       2.291 -33.991  23.784  1.00 40.12      B    C
ATOM   1146  O   CYS   223       2.093 -33.666  22.619  1.00 39.88      B    O
ATOM   1147  CB  CYS   223       2.774 -36.424  23.779  1.00 43.01      B    C
ATOM   1148  SG  CYS   223       3.674 -37.758  24.630  1.00 45.72      B    S
ATOM   1149  N   ASP   224       1.613 -33.482  24.809  1.00 38.82      B    N
ATOM   1150  CA  ASP   224       0.589 -32.452  24.646  1.00 36.21      B    C
ATOM   1151  CB  ASP   224      -0.267 -32.332  25.907  1.00 38.96      B    C
ATOM   1152  CG  ASP   224      -0.850 -33.650  26.351  1.00 41.36      B    C
ATOM   1153  OD1 ASP   224      -0.148 -34.679  26.266  1.00 44.99      B    O
ATOM   1154  OD2 ASP   224      -2.017 -33.657  26.792  1.00 42.87      B    O
ATOM   1155  C   ASP   224       1.280 -31.118  24.421  1.00 34.07      B    C
ATOM   1156  O   ASP   224       0.778 -30.248  23.706  1.00 32.46      B    O
ATOM   1157  N   SER   225       2.442 -30.979  25.053  1.00 31.41      B    N
ATOM   1158  CA  SER   225       3.169 -29.721  25.120  1.00 28.08      B    C
ATOM   1159  CB  SER   225       4.651 -30.002  25.351  1.00 26.55      B    C
ATOM   1160  OG  SER   225       5.418 -28.847  25.088  1.00 27.45      B    O
ATOM   1161  C   SER   225       3.004 -28.809  23.906  1.00 26.58      B    C
ATOM   1162  O   SER   225       2.371 -27.760  23.991  1.00 25.91      B    O
ATOM   1163  N   HIS   226       3.576 -29.203  22.778  1.00 25.93      B    N
ATOM   1164  CA  HIS   226       3.721 -28.286  21.651  1.00 25.28      B    C
ATOM   1165  CB  HIS   226       4.530 -28.958  20.541  1.00 25.17      B    C
ATOM   1166  CG  HIS   226       4.905 -28.039  19.419  1.00 25.61      B    C
ATOM   1167  CD2 HIS   226       5.842 -27.065  19.339  1.00 25.96      B    C
ATOM   1168  ND1 HIS   226       4.308 -28.100  18.177  1.00 25.61      B    N
ATOM   1169  CE1 HIS   226       4.864 -27.205  17.380  1.00 26.84      B    C
ATOM   1170  NE2 HIS   226       5.799 -26.563  18.060  1.00 26.81      B    N
ATOM   1171  C   HIS   226       2.382 -27.807  21.095  1.00 24.30      B    C
ATOM   1172  O   HIS   226       2.193 -26.613  20.867  1.00 24.47      B    O
ATOM   1173  N   GLY   227       1.460 -28.742  20.883  1.00 23.30      B    N
ATOM   1174  CA  GLY   227       0.196 -28.419  20.251  1.00 22.28      B    C
ATOM   1175  C   GLY   227      -0.772 -27.718  21.184  1.00 23.20      B    C
ATOM   1176  O   GLY   227      -1.589 -26.907  20.754  1.00 23.88      B    O
ATOM   1177  N   THR   228      -0.684 -28.022  22.471  1.00 23.01      B    N
ATOM   1178  CA  THR   228      -1.561 -27.394  23.447  1.00 22.63      B    C
ATOM   1179  CB  THR   228      -1.394 -28.024  24.842  1.00 23.38      B    C
ATOM   1180  OG1 THR   228      -1.516 -29.450  24.748  1.00 23.12      B    O
ATOM   1181  CG2 THR   228      -2.456 -27.499  25.782  1.00 21.83      B    C
ATOM   1182  C   THR   228      -1.233 -25.913  23.542  1.00 22.38      B    C
ATOM   1183  O   THR   228      -2.121 -25.067  23.614  1.00 23.83      B    O
ATOM   1184  N   HIS   229       0.050 -25.592  23.534  1.00 22.67      B    N
ATOM   1185  CA  HIS   229       0.446 -24.198  23.574  1.00 22.18      B    C
ATOM   1186  CB  HIS   229       1.964 -24.077  23.632  1.00 22.78      B    C
ATOM   1187  CG  HIS   229       2.448 -22.720  24.041  1.00 23.95      B    C
ATOM   1188  CD2 HIS   229       2.598 -22.159  25.264  1.00 23.15      B    C
ATOM   1189  ND1 HIS   229       2.896 -21.783  23.132  1.00 23.61      B    N
ATOM   1190  CE1 HIS   229       3.305 -20.707  23.778  1.00 23.68      B    C
ATOM   1191  NE2 HIS   229       3.136 -20.909  25.074  1.00 23.94      B    N
ATOM   1192  C   HIS   229      -0.080 -23.527  22.321  1.00 21.39      B    C
ATOM   1193  O   HIS   229      -0.646 -22.443  22.381  1.00 20.56      B    O
ATOM   1194  N   LEU   230       0.096 -24.187  21.184  1.00 20.66      B    N
ATOM   1195  CA  LEU   230      -0.314 -23.605  19.919  1.00 21.11      B    C
ATOM   1196  CB  LEU   230       0.134 -24.495  18.764  1.00 21.06      B    C
ATOM   1197  CG  LEU   230       1.647 -24.572  18.592  1.00 22.74      B    C
ATOM   1198  CD1 LEU   230       1.993 -25.388  17.369  1.00 21.39      B    C
ATOM   1199  CD2 LEU   230       2.204 -23.156  18.478  1.00 23.15      B    C
ATOM   1200  C   LEU   230      -1.821 -23.401  19.858  1.00 21.39      B    C
ATOM   1201  O   LEU   230      -2.296 -22.404  19.304  1.00 21.76      B    O
ATOM   1202  N   ALA   231      -2.569 -24.341  20.431  1.00 21.33      B    N
ATOM   1203  CA  ALA   231      -4.026 -24.270  20.417  1.00 21.00      B    C
ATOM   1204  CB  ALA   231      -4.618 -25.474  21.138  1.00 18.46      B    C
ATOM   1205  C   ALA   231      -4.473 -22.979  21.090  1.00 22.12      B    C
ATOM   1206  O   ALA   231      -5.335 -22.264  20.572  1.00 21.92      B    O
ATOM   1207  N   GLY   232      -3.868 -22.685  22.240  1.00 22.96      B    N
ATOM   1208  CA  GLY   232      -4.181 -21.468  22.965  1.00 24.03      B    C
ATOM   1209  C   GLY   232      -3.799 -20.213  22.207  1.00 24.50      B    C
ATOM   1210  O   GLY   232      -4.573 -19.265  22.132  1.00 25.89      B    O
ATOM   1211  N   VAL   233      -2.609 -20.196  21.628  1.00 25.98      B    N
ATOM   1212  CA  VAL   233      -2.169 -19.014  20.908  1.00 26.71      B    C
ATOM   1213  CB  VAL   233      -0.805 -19.224  20.252  1.00 25.92      B    C
ATOM   1214  CG1 VAL   233      -0.390 -17.959  19.531  1.00 25.35      B    C
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ATOM   1215  CG2 VAL   233       0.215 -19.601  21.294  1.00 25.45      B    C
ATOM   1216  C   VAL   233      -3.171 -18.663  19.823  1.00 28.02      B    C
ATOM   1217  O   VAL   233      -3.284 -17.506  19.424  1.00 29.94      B    O
ATOM   1218  N   VAL   234      -3.906 -19.664  19.349  1.00 29.13      B    N
ATOM   1219  CA  VAL   234      -4.922 -19.447  18.320  1.00 28.46      B    C
ATOM   1220  CB  VAL   234      -5.133 -20.693  17.455  1.00 29.28      B    C
ATOM   1221  CG1 VAL   234      -6.540 -20.693  16.905  1.00 29.41      B    C
ATOM   1222  CG2 VAL   234      -4.135 -20.704  16.310  1.00 30.36      B    C
ATOM   1223  C   VAL   234      -6.281 -19.046  18.854  1.00 26.66      B    C
ATOM   1224  O   VAL   234      -6.833 -18.043  18.425  1.00 26.52      B    O
ATOM   1225  N   SER   235      -6.819 -19.832  19.781  1.00 25.95      B    N
ATOM   1226  CA  SER   235      -8.194 -19.648  20.222  1.00 26.62      B    C
ATOM   1227  CB  SER   235      -9.046 -20.814  19.740  1.00 27.81      B    C
ATOM   1228  OG  SER   235      -8.946 -21.905  20.639  1.00 30.51      B    O
ATOM   1229  C   SER   235      -8.354 -19.516  21.735  1.00 26.18      B    C
ATOM   1230  O   SER   235      -9.471 -19.410  22.230  1.00 25.76      B    O
ATOM   1231  N   GLY   236      -7.243 -19.531  22.464  1.00 26.66      B    N
ATOM   1232  CA  GLY   236      -7.295 -19.505  23.917  1.00 26.34      B    C
ATOM   1233  C   GLY   236      -8.147 -18.384  24.488  1.00 27.10      B    C
ATOM   1234  O   GLY   236      -8.256 -17.308  23.899  1.00 26.56      B    O
ATOM   1235  N   ARG   237      -8.749 -18.637  25.646  1.00 27.20      B    N
ATOM   1236  CA  ARG   237      -9.678 -17.693  26.258  1.00 28.66      B    C
ATOM   1237  CB  ARG   237     -10.412 -18.355  27.422  1.00 31.42      B    C
ATOM   1238  CG  ARG   237     -11.558 -19.253  26.990  1.00 36.85      B    C
ATOM   1239  CD  ARG   237     -11.972 -20.233  28.086  1.00 41.17      B    C
ATOM   1240  NE  ARG   237     -13.193 -20.955  27.729  1.00 46.01      B    N
ATOM   1241  CZ  ARG   237     -13.224 -22.136  27.114  1.00 48.46      B    C
ATOM   1242  NH1 ARG   237     -14.395 -22.702  26.833  1.00 49.07      B    N
ATOM   1243  NH2 ARG   237     -12.093 -22.756  26.784  1.00 48.35      B    N
ATOM   1244  C   ARG   237      -9.021 -16.416  26.748  1.00 27.85      B    C
ATOM   1245  O   ARG   237      -9.582 -15.331  26.603  1.00 26.35      B    O
ATOM   1246  N   ASP   238      -7.838 -16.546  27.334  1.00 28.76      B    N
ATOM   1247  CA  ASP   238      -7.118 -15.392  27.861  1.00 30.27      B    C
ATOM   1248  CB  ASP   238      -6.617 -15.685  29.280  1.00 33.62      B    C
ATOM   1249  CG  ASP   238      -7.733 -16.134  30.216  1.00 37.65      B    C
ATOM   1250  OD1 ASP   238      -8.918 -15.968  29.852  1.00 39.82      B    O
ATOM   1251  OD2 ASP   238      -7.429 -16.652  31.316  1.00 37.81      B    O
ATOM   1252  C   ASP   238      -5.935 -15.002  26.978  1.00 29.53      B    C
ATOM   1253  O   ASP   238      -5.566 -13.836  26.902  1.00 29.35      B    O
ATOM   1254  N   ALA   239      -5.342 -15.985  26.311  1.00 30.01      B    N
ATOM   1255  CA  ALA   239      -4.086 -15.779  25.601  1.00 29.41      B    C
ATOM   1256  CB  ALA   239      -3.024 -16.745  26.132  1.00 27.71      B    C
ATOM   1257  C   ALA   239      -4.251 -15.961  24.098  1.00 29.33      B    C
ATOM   1258  O   ALA   239      -3.298 -15.821  23.342  1.00 29.65      B    O
ATOM   1259  N   GLY   240      -5.462 -16.280  23.663  1.00 30.49      B    N
ATOM   1260  CA  GLY   240      -5.670 -16.564  22.258  1.00 29.73      B    C
ATOM   1261  C   GLY   240      -5.746 -15.301  21.434  1.00 29.50      B    C
ATOM   1262  O   GLY   240      -5.981 -14.218  21.967  1.00 28.77      B    O
ATOM   1263  N   VAL   241      -5.539 -15.449  20.129  1.00 29.66      B    N
ATOM   1264  CA  VAL   241      -5.801 -14.389  19.165  1.00 29.00      B    C
ATOM   1265  CB  VAL   241      -4.887 -14.534  17.934  1.00 27.73      B    C
ATOM   1266  CG1 VAL   241      -5.211 -13.462  16.912  1.00 27.00      B    C
ATOM   1267  CG2 VAL   241      -3.441 -14.432  18.359  1.00 27.06      B    C
ATOM   1268  C   VAL   241      -7.261 -14.426  18.703  1.00 29.65      B    C
ATOM   1269  O   VAL   241      -8.006 -13.454  18.869  1.00 30.73      B    O
ATOM   1270  N   ALA   242      -7.670 -15.555  18.130  1.00 29.93      B    N
ATOM   1271  CA  ALA   242      -9.018 -15.693  17.580  1.00 29.53      B    C
ATOM   1272  CB  ALA   242      -8.964 -16.377  16.220  1.00 28.85      B    C
ATOM   1273  C   ALA   242      -9.921 -16.478  18.515  1.00 28.85      B    C
ATOM   1274  O   ALA   242     -10.393 -17.559  18.176  1.00 28.12      B    O
ATOM   1275  N   LYS   243     -10.159 -15.930  19.696  1.00 29.26      B    N
ATOM   1276  CA  LYS   243     -11.157 -16.492  20.582  1.00 29.82      B    C
ATOM   1277  CB  LYS   243     -11.445 -15.500  21.697  1.00 28.15      B    C
ATOM   1278  CG  LYS   243     -10.347 -14.472  21.869  1.00 26.26      B    C
ATOM   1279  CD  LYS   243      -9.612 -14.683  23.175  1.00 26.89      B    C
ATOM   1280  CE  LYS   243      -8.704 -13.506  23.508  1.00 26.93      B    C
ATOM   1281  NZ  LYS   243      -8.473 -13.398  24.973  1.00 26.14      B    N
ATOM   1282  C   LYS   243     -12.415 -16.735  19.747  1.00 31.25      B    C
ATOM   1283  O   LYS   243     -12.645 -16.054  18.750  1.00 33.02      B    O
ATOM   1284  N   GLY   244     -13.220 -17.718  20.123  1.00 31.12      B    N
ATOM   1285  CA  GLY   244     -14.451 -17.936  19.385  1.00 31.63      B    C
ATOM   1286  C   GLY   244     -14.296 -18.595  18.025  1.00 31.24      B    C
ATOM   1287  O   GLY   244     -15.258 -19.141  17.487  1.00 31.27      B    O
ATOM   1288  N   ALA   245     -13.100 -18.542  17.456  1.00 31.32      B    N
ATOM   1289  CA  ALA   245     -12.768 -19.446  16.366  1.00 32.05      B    C
ATOM   1290  CB  ALA   245     -11.446 -19.059  15.757  1.00 31.24      B    C
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ATOM   1291  C   ALA   245     -12.683 -20.847  16.956  1.00 32.80      B    C
ATOM   1292  O   ALA   245     -12.548 -21.012  18.170  1.00 33.98      B    O
ATOM   1293  N   SER   246     -12.764 -21.864  16.111  1.00 33.54      B    N
ATOM   1294  CA  SER   246     -12.791 -23.227  16.625  1.00 34.92      B    C
ATOM   1295  CB  SER   246     -14.207 -23.775  16.536  1.00 36.59      B    C
ATOM   1296  OG  SER   246     -15.062 -23.000  17.353  1.00 39.79      B    O
ATOM   1297  C   SER   246     -11.821 -24.180  15.951  1.00 34.43      B    C
ATOM   1298  O   SER   246     -11.525 -24.051  14.768  1.00 34.27      B    O
ATOM   1299  N   MET   247     -11.334 -25.145  16.719  1.00 34.89      B    N
ATOM   1300  CA  MET   247     -10.205 -25.947  16.292  1.00 35.66      B    C
ATOM   1301  CB  MET   247      -9.026 -25.702  17.237  1.00 38.44      B    C
ATOM   1302  CG  MET   247      -8.439 -24.296  17.103  1.00 41.75      B    C
ATOM   1303  SD  MET   247      -7.185 -23.868  18.326  1.00 45.85      B    S
ATOM   1304  CE  MET   247      -5.832 -24.890  17.796  1.00 44.65      B    C
ATOM   1305  C   MET   247     -10.499 -27.436  16.194  1.00 35.05      B    C
ATOM   1306  O   MET   247     -11.242 -28.001  16.995  1.00 34.54      B    O
ATOM   1307  N   ARG   248      -9.909 -28.066  15.190  1.00 34.28      B    N
ATOM   1308  CA  ARG   248      -9.950 -29.509  15.083  1.00 33.81      B    C
ATOM   1309  CB  ARG   248     -10.815 -29.914  13.897  1.00 35.62      B    C
ATOM   1310  CG  ARG   248     -11.884 -28.894  13.551  1.00 38.31      B    C
ATOM   1311  CD  ARG   248     -12.886 -29.472  12.566  1.00 40.68      B    C
ATOM   1312  NE  ARG   248     -13.589 -30.609  13.149  1.00 44.00      B    N
ATOM   1313  CZ  ARG   248     -14.713 -30.509  13.849  1.00 45.66      B    C
ATOM   1314  NH1 ARG   248     -15.285 -31.596  14.351  1.00 46.06      B    N
ATOM   1315  NH2 ARG   248     -15.268 -29.320  14.041  1.00 46.30      B    N
ATOM   1316  C   ARG   248      -8.526 -30.023  14.905  1.00 32.41      B    C
ATOM   1317  O   ARG   248      -7.850 -29.692  13.928  1.00 32.44      B    O
ATOM   1318  N   SER   249      -8.083 -30.836  15.857  1.00 29.90      B    N
ATOM   1319  CA  SER   249      -6.694 -31.247  15.930  1.00 27.61      B    C
ATOM   1320  CB  SER   249      -6.250 -31.200  17.393  1.00 27.24      B    C
ATOM   1321  OG  SER   249      -5.681 -32.427  17.811  1.00 27.75      B    O
ATOM   1322  C   SER   249      -6.420 -32.638  15.330  1.00 26.69      B    C
ATOM   1323  O   SER   249      -7.102 -33.608  15.649  1.00 27.35      B    O
ATOM   1324  N   LEU   250      -5.415 -32.727  14.462  1.00 25.20      B    N
ATOM   1325  CA  LEU   250      -4.862 -34.016  14.044  1.00 24.40      B    C
ATOM   1326  CB  LEU   250      -4.708 -34.070  12.521  1.00 25.99      B    C
ATOM   1327  CG  LEU   250      -5.964 -34.039  11.643  1.00 25.42      B    C
ATOM   1328  CD1 LEU   250      -6.634 -32.682  11.736  1.00 25.61      B    C
ATOM   1329  CD2 LEU   250      -5.574 -34.329  10.205  1.00 25.09      B    C
ATOM   1330  C   LEU   250      -3.493 -34.224  14.691  1.00 23.33      B    C
ATOM   1331  O   LEU   250      -2.813 -33.257  15.010  1.00 23.67      B    O
ATOM   1332  N   ARG   251      -3.091 -35.477  14.891  1.00 22.89      B    N
ATOM   1333  CA  ARG   251      -1.769 -35.763  15.438  1.00 22.61      B    C
ATOM   1334  CB  ARG   251      -1.859 -36.714  16.630  1.00 21.26      B    C
ATOM   1335  CG  ARG   251      -0.487 -37.028  17.209  1.00 23.82      B    C
ATOM   1336  CD  ARG   251      -0.542 -37.959  18.419  1.00 26.20      B    C
ATOM   1337  NE  ARG   251       0.709 -37.945  19.182  1.00 26.31      B    N
ATOM   1338  CZ  ARG   251       1.351 -39.036  19.585  1.00 25.27      B    C
ATOM   1339  NH1 ARG   251       0.863 -40.233  19.299  1.00 24.93      B    N
ATOM   1340  NH2 ARG   251       2.477 -38.931  20.275  1.00 25.73      B    N
ATOM   1341  C   ARG   251      -0.812 -36.355  14.406  1.00 23.38      B    C
ATOM   1342  O   ARG   251      -0.951 -37.511  13.993  1.00 23.07      B    O
ATOM   1343  N   VAL   252       0.174 -35.559  14.002  1.00 23.27      B    N
ATOM   1344  CA  VAL   252       1.136 -35.992  12.999  1.00 24.29      B    C
ATOM   1345  CB  VAL   252       1.134 -35.048  11.791  1.00 24.61      B    C
ATOM   1346  CG1 VAL   252      -0.182 -35.150  11.053  1.00 24.12      B    C
ATOM   1347  CG2 VAL   252       1.350 -33.633  12.261  1.00 25.97      B    C
ATOM   1348  C   VAL   252       2.546 -36.054  13.570  1.00 24.19      B    C
ATOM   1349  O   VAL   252       3.447 -36.634  12.959  1.00 25.34      B    O
ATOM   1350  N   LEU   253       2.720 -35.454  14.744  1.00 24.84      B    N
ATOM   1351  CA  LEU   253       4.006 -35.411  15.430  1.00 24.76      B    C
ATOM   1352  CB  LEU   253       4.361 -33.967  15.776  1.00 23.72      B    C
ATOM   1353  CG  LEU   253       4.361 -32.960  14.625  1.00 22.29      B    C
ATOM   1354  CD1 LEU   253       4.645 -31.576  15.154  1.00 21.59      B    C
ATOM   1355  CD2 LEU   253       5.408 -33.352  13.607  1.00 22.92      B    C
ATOM   1356  C   LEU   253       3.950 -36.233  16.714  1.00 26.34      B    C
ATOM   1357  O   LEU   253       3.063 -36.031  17.551  1.00 26.64      B    O
ATOM   1358  N   ASN   254       4.907 -37.147  16.870  1.00 27.39      B    N
ATOM   1359  CA  ASN   254       4.999 -37.981  18.066  1.00 27.84      B    C
ATOM   1360  CB  ASN   254       5.988 -39.131  17.832  1.00 28.42      B    C
ATOM   1361  CG  ASN   254       7.439 -38.676  17.836  1.00 28.34      B    C
ATOM   1362  OD1 ASN   254       7.727 -37.486  17.881  1.00 28.47      B    O
ATOM   1363  ND2 ASN   254       8.358 -39.630  17.788  1.00 28.22      B    N
ATOM   1364  C   ASN   254       5.414 -37.177  19.306  1.00 28.27      B    C
ATOM   1365  O   ASN   254       5.418 -35.938  19.295  1.00 28.25      B    O
ATOM   1366  N   CYS   255       5.756 -37.884  20.376  1.00 28.16      B    N
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ATOM   1367  CA  CYS   255       6.024 -37.239  21.655  1.00 28.63      B    C
ATOM   1368  C   CYS   255       7.325 -36.487  21.675  1.00 26.69      B    C
ATOM   1369  O   CYS   255       7.626 -35.806  22.645  1.00 27.25      B    O
ATOM   1370  CB  CYS   255       6.045 -38.258  22.781  1.00 32.30      B    C
ATOM   1371  SG  CYS   255       4.407 -38.942  23.137  1.00 43.56      B    S
ATOM   1372  N   GLN   256       8.111 -36.622  20.617  1.00 24.58      B    N
ATOM   1373  CA  GLN   256       9.348 -35.875  20.520  1.00 21.14      B    C
ATOM   1374  CB  GLN   256      10.503 -36.846  20.406  1.00 21.92      B    C
ATOM   1375  CG  GLN   256      10.613 -37.723  21.623  1.00 24.98      B    C
ATOM   1376  CD  GLN   256      11.095 -39.115  21.295  1.00 28.39      B    C
ATOM   1377  OE1 GLN   256      11.508 -39.398  20.165  1.00 30.69      B    O
ATOM   1378  NE2 GLN   256      11.045 -40.001  22.283  1.00 30.25      B    N
ATOM   1379  C   GLN   256       9.337 -34.893  19.357  1.00 20.02      B    C
ATOM   1380  O   GLN   256      10.385 -34.517  18.843  1.00 19.29      B    O
ATOM   1381  N   GLY   257       8.139 -34.479  18.950  1.00 19.22      B    N
ATOM   1382  CA  GLY   257       8.004 -33.430  17.957  1.00 19.26      B    C
ATOM   1383  C   GLY   257       8.241 -33.906  16.542  1.00 19.45      B    C
ATOM   1384  O   GLY   257       8.408 -33.104  15.619  1.00 18.96      B    O
ATOM   1385  N   LYS   258       8.248 -35.223  16.370  1.00 20.81      B    N
ATOM   1386  CA  LYS   258       8.682 -35.826  15.123  1.00 21.90      B    C
ATOM   1387  CB  LYS   258       9.762 -36.856  15.415  1.00 21.99      B    C
ATOM   1388  CG  LYS   258      10.399 -37.442  14.179  1.00 27.25      B    C
ATOM   1389  CD  LYS   258      11.905 -37.233  14.196  1.00 30.54      B    C
ATOM   1390  CE  LYS   258      12.624 -38.401  13.536  1.00 34.07      B    C
ATOM   1391  NZ  LYS   258      14.066 -38.101  13.269  1.00 37.21      B    N
ATOM   1392  C   LYS   258       7.536 -36.476  14.353  1.00 21.86      B    C
ATOM   1393  O   LYS   258       6.699 -37.167  14.923  1.00 23.60      B    O
ATOM   1394  N   GLY   259       7.504 -36.233  13.050  1.00 22.07      B    N
ATOM   1395  CA  GLY   259       6.571 -36.918  12.178  1.00 22.34      B    C
ATOM   1396  C   GLY   259       7.238 -37.276  10.862  1.00 22.86      B    C
ATOM   1397  O   GLY   259       8.467 -37.230  10.747  1.00 23.37      B    O
ATOM   1398  N   THR   260       6.435 -37.637   9.866  1.00 21.84      B    N
ATOM   1399  CA  THR   260       6.966 -37.958   8.548  1.00 21.86      B    C
ATOM   1400  CB  THR   260       6.869 -39.462   8.253  1.00 20.56      B    C
ATOM   1401  OG1 THR   260       5.496 -39.859   8.248  1.00 19.54      B    O
ATOM   1402  CG2 THR   260       7.622 -40.251   9.309  1.00 19.92      B    C
ATOM   1403  C   THR   260       6.203 -37.201   7.475  1.00 22.65      B    C
ATOM   1404  O   THR   260       5.080 -36.777   7.704  1.00 24.48      B    O
ATOM   1405  N   VAL   261       6.811 -37.024   6.306  1.00 22.69      B    N
ATOM   1406  CA  VAL   261       6.173 -36.262   5.247  1.00 21.49      B    C
ATOM   1407  CB  VAL   261       7.091 -36.153   4.018  1.00 20.59      B    C
ATOM   1408  CG1 VAL   261       6.402 -35.364   2.919  1.00 19.43      B    C
ATOM   1409  CG2 VAL   261       8.388 -35.473   4.408  1.00 19.44      B    C
ATOM   1410  C   VAL   261       4.872 -36.951   4.860  1.00 21.94      B    C
ATOM   1411  O   VAL   261       3.850 -36.301   4.624  1.00 22.12      B    O
ATOM   1412  N   SER   262       4.911 -38.278   4.830  1.00 22.53      B    N
ATOM   1413  CA  SER   262       3.757 -39.076   4.428  1.00 22.26      B    C
ATOM   1414  CB  SER   262       4.165 -40.541   4.284  1.00 22.47      B    C
ATOM   1415  OG  SER   262       4.955 -40.941   5.390  1.00 25.99      B    O
ATOM   1416  C   SER   262       2.605 -38.962   5.414  1.00 21.68      B    C
ATOM   1417  O   SER   262       1.457 -38.779   5.009  1.00 22.09      B    O
ATOM   1418  N   GLY   263       2.916 -39.076   6.702  1.00 21.45      B    N
ATOM   1419  CA  GLY   263       1.909 -38.867   7.724  1.00 21.21      B    C
ATOM   1420  C   GLY   263       1.256 -37.506   7.567  1.00 22.43      B    C
ATOM   1421  O   GLY   263       0.063 -37.328   7.845  1.00 21.36      B    O
ATOM   1422  N   THR   264       2.039 -36.538   7.103  1.00 22.11      B    N
ATOM   1423  CA  THR   264       1.527 -35.202   6.887  1.00 21.72      B    C
ATOM   1424  CB  THR   264       2.644 -34.228   6.597  1.00 21.29      B    C
ATOM   1425  OG1 THR   264       3.532 -34.176   7.715  1.00 20.27      B    O
ATOM   1426  CG2 THR   264       2.074 -32.850   6.348  1.00 21.16      B    C
ATOM   1427  C   THR   264       0.585 -35.208   5.701  1.00 23.10      B    C
ATOM   1428  O   THR   264      -0.547 -34.732   5.796  1.00 25.02      B    O
ATOM   1429  N   LEU   265       1.058 -35.753   4.584  1.00 23.29      B    N
ATOM   1430  CA  LEU   265       0.233 -35.904   3.388  1.00 21.86      B    C
ATOM   1431  CB  LEU   265       0.904 -36.860   2.412  1.00 20.38      B    C
ATOM   1432  CG  LEU   265       2.200 -36.340   1.805  1.00 20.98      B    C
ATOM   1433  CD1 LEU   265       2.879 -37.457   1.015  1.00 20.52      B    C
ATOM   1434  CD2 LEU   265       1.898 -35.139   0.919  1.00 19.35      B    C
ATOM   1435  C   LEU   265      -1.135 -36.455   3.745  1.00 21.27      B    C
ATOM   1436  O   LEU   265      -2.159 -35.900   3.361  1.00 23.43      B    O
ATOM   1437  N   ILE   266      -1.136 -37.555   4.485  1.00 19.76      B    N
ATOM   1438  CA  ILE   266      -2.355 -38.257   4.838  1.00 18.31      B    C
ATOM   1439  CB  ILE   266      -2.002 -39.585   5.543  1.00 16.80      B    C
ATOM   1440  CG2 ILE   266      -3.251 -40.323   5.957  1.00 13.78      B    C
ATOM   1441  CG1 ILE   266      -1.151 -40.436   4.603  1.00 14.04      B    C
ATOM   1442  CD1 ILE   266      -0.945 -41.830   5.071  1.00 14.81      B    C
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ATOM   1443  C   ILE   266      -3.219 -37.386   5.746  1.00 20.40      B    C
ATOM   1444  O   ILE   266      -4.454 -37.447   5.703  1.00 20.07      B    O
ATOM   1445  N   GLY   267      -2.560 -36.566   6.560  1.00 21.94      B    N
ATOM   1446  CA  GLY   267      -3.283 -35.624   7.393  1.00 21.97      B    C
ATOM   1447  C   GLY   267      -4.098 -34.693   6.520  1.00 22.46      B    C
ATOM   1448  O   GLY   267      -5.301 -34.527   6.717  1.00 23.67      B    O
ATOM   1449  N   LEU   268      -3.444 -34.092   5.538  1.00 21.50      B    N
ATOM   1450  CA  LEU   268      -4.124 -33.185   4.639  1.00 21.24      B    C
ATOM   1451  CB  LEU   268      -3.108 -32.532   3.697  1.00 21.08      B    C
ATOM   1452  CG  LEU   268      -1.978 -31.721   4.354  1.00 20.19      B    C
ATOM   1453  CD1 LEU   268      -1.029 -31.208   3.291  1.00 20.01      B    C
ATOM   1454  CD2 LEU   268      -2.550 -30.556   5.130  1.00 19.67      B    C
ATOM   1455  C   LEU   268      -5.214 -33.910   3.841  1.00 22.54      B    C
ATOM   1456  O   LEU   268      -6.269 -33.333   3.558  1.00 24.32      B    O
ATOM   1457  N   GLU   269      -4.983 -35.172   3.488  1.00 21.86      B    N
ATOM   1458  CA  GLU   269      -6.009 -35.930   2.778  1.00 21.18      B    C
ATOM   1459  CB  GLU   269      -5.553 -37.367   2.519  1.00 22.31      B    C
ATOM   1460  CG  GLU   269      -6.368 -38.078   1.431  1.00 24.62      B    C
ATOM   1461  CD  GLU   269      -6.354 -39.593   1.562  1.00 25.91      B    C
ATOM   1462  OE1 GLU   269      -5.320 -40.154   1.966  1.00 27.02      B    O
ATOM   1463  OE2 GLU   269      -7.382 -40.229   1.257  1.00 27.61      B    O
ATOM   1464  C   GLU   269      -7.250 -35.957   3.650  1.00 20.82      B    C
ATOM   1465  O   GLU   269      -8.365 -35.650   3.209  1.00 21.02      B    O
ATOM   1466  N   PHE   270      -7.032 -36.321   4.906  1.00 19.63      B    N
ATOM   1467  CA  PHE   270      -8.100 -36.429   5.881  1.00 17.51      B    C
ATOM   1468  CB  PHE   270      -7.495 -36.822   7.220  1.00 16.07      B    C
ATOM   1469  CG  PHE   270      -8.467 -36.847   8.342  1.00 15.79      B    C
ATOM   1470  CD1 PHE   270      -8.923 -38.046   8.844  1.00 16.82      B    C
ATOM   1471  CD2 PHE   270      -8.884 -35.672   8.940  1.00 16.62      B    C
ATOM   1472  CE1 PHE   270      -9.774 -38.081   9.933  1.00 17.22      B    C
ATOM   1473  CE2 PHE   270      -9.728 -35.697  10.023  1.00 17.59      B    C
ATOM   1474  CZ  PHE   270     -10.176 -36.910  10.523  1.00 18.31      B    C
ATOM   1475  C   PHE   270      -8.860 -35.114   5.997  1.00 16.78      B    C
ATOM   1476  O   PHE   270     -10.089 -35.096   6.065  1.00 17.12      B    O
ATOM   1477  N   ILE   271      -8.125 -34.012   6.008  1.00 15.76      B    N
ATOM   1478  CA  ILE   271      -8.743 -32.713   6.185  1.00 16.00      B    C
ATOM   1479  CB  ILE   271      -7.686 -31.603   6.253  1.00 16.26      B    C
ATOM   1480  CG2 ILE   271      -8.346 -30.272   6.509  1.00 15.52      B    C
ATOM   1481  CG1 ILE   271      -6.715 -31.875   7.390  1.00 16.87      B    C
ATOM   1482  CD1 ILE   271      -5.899 -30.666   7.767  1.00 16.57      B    C
ATOM   1483  C   ILE   271      -9.697 -32.409   5.039  1.00 16.31      B    C
ATOM   1484  O   ILE   271     -10.801 -31.905   5.247  1.00 18.27      B    O
ATOM   1485  N   ARG   272      -9.276 -32.722   3.825  1.00 15.58      B    N
ATOM   1486  CA  ARG   272     -10.058 -32.368   2.657  1.00 14.76      B    C
ATOM   1487  CB  ARG   272      -9.167 -32.521   1.425  1.00 13.53      B    C
ATOM   1488  CG  ARG   272      -9.870 -32.459   0.112  1.00 14.31      B    C
ATOM   1489  CD  ARG   272     -10.647 -31.195  -0.054  1.00 14.45      B    C
ATOM   1490  NE  ARG   272     -10.958 -30.998  -1.464  1.00 18.03      B    N
ATOM   1491  CZ  ARG   272     -11.694 -30.000  -1.939  1.00 17.53      B    C
ATOM   1492  NH1 ARG   272     -11.920 -29.895  -3.237  1.00 18.77      B    N
ATOM   1493  NH2 ARG   272     -12.217 -29.114  -1.117  1.00 17.11      B    N
ATOM   1494  C   ARG   272     -11.332 -33.229   2.569  1.00 14.98      B    C
ATOM   1495  O   ARG   272     -12.411 -32.735   2.240  1.00 13.74      B    O
ATOM   1496  N   LYS   273     -11.213 -34.511   2.898  1.00 16.77      B    N
ATOM   1497  CA  LYS   273     -12.380 -35.393   2.914  1.00 19.15      B    C
ATOM   1498  CB  LYS   273     -11.971 -36.834   3.234  1.00 19.12      B    C
ATOM   1499  CG  LYS   273     -13.115 -37.702   3.711  1.00 21.09      B    C
ATOM   1500  CD  LYS   273     -13.108 -37.797   5.246  1.00 28.83      B    C
ATOM   1501  CE  LYS   273     -14.534 -37.717   5.868  1.00 32.67      B    C
ATOM   1502  NZ  LYS   273     -14.605 -37.111   7.263  1.00 30.13      B    N
ATOM   1503  C   LYS   273     -13.424 -34.937   3.924  1.00 20.09      B    C
ATOM   1504  O   LYS   273     -14.622 -34.957   3.639  1.00 20.19      B    O
ATOM   1505  N   SER   274     -12.970 -34.528   5.104  1.00 20.81      B    N
ATOM   1506  CA  SER   274     -13.879 -34.101   6.166  1.00 21.13      B    C
ATOM   1507  CB  SER   274     -13.089 -33.634   7.385  1.00 20.17      B    C
ATOM   1508  OG  SER   274     -12.088 -34.580   7.707  1.00 21.58      B    O
ATOM   1509  C   SER   274     -14.713 -32.956   5.648  1.00 20.96      B    C
ATOM   1510  O   SER   274     -15.902 -32.838   5.927  1.00 22.15      B    O
ATOM   1511  N   GLN   275     -14.068 -32.112   4.867  1.00 20.71      B    N
ATOM   1512  CA  GLN   275     -14.668 -30.868   4.471  1.00 20.82      B    C
ATOM   1513  CB  GLN   275     -13.566 -29.907   4.085  1.00 19.43      B    C
ATOM   1514  CG  GLN   275     -14.035 -28.600   3.568  1.00 18.84      B    C
ATOM   1515  CD  GLN   275     -13.215 -28.212   2.389  1.00 19.76      B    C
ATOM   1516  OE1 GLN   275     -12.708 -29.082   1.681  1.00 22.34      B    O
ATOM   1517  NE2 GLN   275     -13.057 -26.918   2.163  1.00 18.84      B    N
ATOM   1518  C   GLN   275     -15.632 -31.078   3.320  1.00 21.36      B    C
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ATOM	1519	O	GLN	275	-16.578	-30.317	3.144	1.00	21.85	B	O
ATOM	1520	N	LEU	276	-15.393	-32.124	2.542	1.00	21.35	B	N
ATOM	1521	CA	LEU	276	-16.293	-32.468	1.458	1.00	21.46	B	C
ATOM	1522	CB	LEU	276	-15.569	-33.370	0.468	1.00	20.85	B	C
ATOM	1523	CG	LEU	276	-14.412	-32.655	-0.222	1.00	21.54	B	C
ATOM	1524	CD1	LEU	276	-13.352	-33.659	-0.648	1.00	21.26	B	C
ATOM	1525	CD2	LEU	276	-14.946	-31.877	-1.410	1.00	18.00	B	C
ATOM	1526	C	LEU	276	-17.540	-33.162	1.994	1.00	22.78	B	C
ATOM	1527	O	LEU	276	-18.622	-33.061	1.406	1.00	23.18	B	O
ATOM	1528	N	VAL	277	-17.378	-33.855	3.119	1.00	23.69	B	N
ATOM	1529	CA	VAL	277	-18.449	-34.645	3.719	1.00	23.85	B	C
ATOM	1530	CB	VAL	277	-17.867	-35.768	4.570	1.00	21.82	B	C
ATOM	1531	CG1	VAL	277	-18.977	-36.622	5.132	1.00	21.54	B	C
ATOM	1532	CG2	VAL	277	-16.941	-36.597	3.735	1.00	22.34	B	C
ATOM	1533	C	VAL	277	-19.370	-33.801	4.596	1.00	25.25	B	C
ATOM	1534	O	VAL	277	-20.541	-34.136	4.804	1.00	25.41	B	O
ATOM	1535	N	GLN	278	-18.826	-32.707	5.115	1.00	26.20	B	N
ATOM	1536	CA	GLN	278	-19.583	-31.798	5.960	1.00	26.06	B	C
ATOM	1537	CB	GLN	278	-19.440	-32.202	7.414	1.00	28.61	B	C
ATOM	1538	CG	GLN	278	-20.458	-33.207	7.843	1.00	35.11	B	C
ATOM	1539	CD	GLN	278	-21.228	-32.729	9.047	1.00	39.20	B	C
ATOM	1540	OE1	GLN	278	-20.635	-32.271	10.033	1.00	40.40	B	O
ATOM	1541	NE2	GLN	278	-22.562	-32.821	8.980	1.00	41.21	B	N
ATOM	1542	C	GLN	278	-19.108	-30.372	5.791	1.00	25.07	B	C
ATOM	1543	O	GLN	278	-18.602	-29.760	6.729	1.00	25.51	B	O
ATOM	1544	N	PRO	279	-19.272	-29.817	4.586	1.00	24.43	B	N
ATOM	1545	CD	PRO	279	-20.021	-30.374	3.449	1.00	22.73	B	C
ATOM	1546	CA	PRO	279	-18.773	-28.467	4.320	1.00	23.37	B	C
ATOM	1547	CB	PRO	279	-19.302	-28.148	2.922	1.00	21.77	B	C
ATOM	1548	CG	PRO	279	-20.342	-29.170	2.644	1.00	22.09	B	C
ATOM	1549	C	PRO	279	-19.239	-27.470	5.362	1.00	22.65	B	C
ATOM	1550	O	PRO	279	-20.374	-27.525	5.820	1.00	23.20	B	O
ATOM	1551	N	VAL	280	-18.336	-26.571	5.742	1.00	23.67	B	N
ATOM	1552	CA	VAL	280	-18.598	-25.562	6.768	1.00	22.67	B	C
ATOM	1553	CB	VAL	280	-17.728	-25.800	8.019	1.00	22.17	B	C
ATOM	1554	CG1	VAL	280	-18.175	-27.056	8.729	1.00	20.68	B	C
ATOM	1555	CG2	VAL	280	-16.267	-25.934	7.607	1.00	23.06	B	C
ATOM	1556	C	VAL	280	-18.283	-24.179	6.220	1.00	22.17	B	C
ATOM	1557	O	VAL	280	-18.635	-23.858	5.088	1.00	20.16	B	O
ATOM	1558	N	GLY	281	-17.613	-23.366	7.032	1.00	23.75	B	N
ATOM	1559	CA	GLY	281	-17.163	-22.064	6.570	1.00	24.31	B	C
ATOM	1560	C	GLY	281	-15.768	-22.144	5.984	1.00	24.09	B	C
ATOM	1561	O	GLY	281	-15.317	-23.229	5.636	1.00	24.64	B	O
ATOM	1562	N	PRO	282	-15.059	-21.013	5.865	1.00	24.04	B	N
ATOM	1563	CD	PRO	282	-15.556	-19.651	6.123	1.00	24.55	B	C
ATOM	1564	CA	PRO	282	-13.654	-21.006	5.451	1.00	24.01	B	C
ATOM	1565	CB	PRO	282	-13.274	-19.527	5.493	1.00	24.10	B	C
ATOM	1566	CG	PRO	282	-14.564	-18.795	5.411	1.00	23.06	B	C
ATOM	1567	C	PRO	282	-12.796	-21.839	6.409	1.00	24.43	B	C
ATOM	1568	O	PRO	282	-13.047	-21.856	7.617	1.00	24.10	B	O
ATOM	1569	N	LEU	283	-11.792	-22.528	5.863	1.00	24.32	B	N
ATOM	1570	CA	LEU	283	-10.926	-23.400	6.651	1.00	23.30	B	C
ATOM	1571	CB	LEU	283	-10.884	-24.802	6.057	1.00	22.99	B	C
ATOM	1572	CG	LEU	283	-12.166	-25.615	6.083	1.00	23.79	B	C
ATOM	1573	CD1	LEU	283	-11.845	-27.055	5.708	1.00	24.80	B	C
ATOM	1574	CD2	LEU	283	-12.784	-25.549	7.465	1.00	25.21	B	C
ATOM	1575	C	LEU	283	-9.512	-22.865	6.687	1.00	22.69	B	C
ATOM	1576	O	LEU	283	-8.999	-22.402	5.679	1.00	23.60	B	O
ATOM	1577	N	VAL	284	-8.881	-22.944	7.851	1.00	22.49	B	N
ATOM	1578	CA	VAL	284	-7.471	-22.605	7.973	1.00	21.61	B	C
ATOM	1579	CB	VAL	284	-7.271	-21.405	8.918	1.00	21.87	B	C
ATOM	1580	CG1	VAL	284	-5.794	-21.231	9.247	1.00	20.77	B	C
ATOM	1581	CG2	VAL	284	-7.825	-20.147	8.268	1.00	20.07	B	C
ATOM	1582	C	VAL	284	-6.679	-23.794	8.496	1.00	20.93	B	C
ATOM	1583	O	VAL	284	-6.957	-24.315	9.573	1.00	20.79	B	O
ATOM	1584	N	VAL	285	-5.696	-24.231	7.718	1.00	21.45	B	N
ATOM	1585	CA	VAL	285	-4.803	-25.283	8.175	1.00	21.67	B	C
ATOM	1586	CB	VAL	285	-4.470	-26.269	7.049	1.00	23.02	B	C
ATOM	1587	CG1	VAL	285	-3.716	-27.470	7.613	1.00	22.15	B	C
ATOM	1588	CG2	VAL	285	-5.747	-26.714	6.363	1.00	24.14	B	C
ATOM	1589	C	VAL	285	-3.506	-24.674	8.687	1.00	20.61	B	C
ATOM	1590	O	VAL	285	-2.849	-23.902	7.986	1.00	18.40	B	O
ATOM	1591	N	LEU	286	-3.161	-25.023	9.924	1.00	20.05	B	N
ATOM	1592	CA	LEU	286	-1.912	-24.605	10.535	1.00	20.46	B	C
ATOM	1593	CB	LEU	286	-2.150	-24.169	11.973	1.00	21.88	B	C
ATOM	1594	CG	LEU	286	-0.864	-23.852	12.738	1.00	22.20	B	C

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ATOM   1595  CD1 LEU   286      -0.189 -22.614  12.136  1.00 20.76      B    C
ATOM   1596  CD2 LEU   286      -1.201 -23.638  14.196  1.00 21.62      B    C
ATOM   1597  C   LEU   286      -0.892 -25.734  10.532  1.00 20.34      B    C
ATOM   1598  O   LEU   286      -1.162 -26.824  11.035  1.00 19.43      B    O
ATOM   1599  N   LEU   287       0.286 -25.458   9.978  1.00 21.20      B    N
ATOM   1600  CA  LEU   287       1.346 -26.463   9.881  1.00 21.06      B    C
ATOM   1601  CB  LEU   287       1.646 -26.744   8.406  1.00 20.12      B    C
ATOM   1602  CG  LEU   287       0.453 -27.283   7.608  1.00 17.86      B    C
ATOM   1603  CD1 LEU   287       0.647 -27.013   6.144  1.00 16.35      B    C
ATOM   1604  CD2 LEU   287       0.292 -28.768   7.864  1.00 17.11      B    C
ATOM   1605  C   LEU   287       2.616 -26.007  10.612  1.00 20.61      B    C
ATOM   1606  O   LEU   287       3.545 -25.471  10.001  1.00 20.04      B    O
ATOM   1607  N   PRO   288       2.657 -26.211  11.941  1.00 20.31      B    N
ATOM   1608  CD  PRO   288       1.636 -26.978  12.681  1.00 19.79      B    C
ATOM   1609  CA  PRO   288       3.741 -25.767  12.823  1.00 19.59      B    C
ATOM   1610  CB  PRO   288       3.062 -25.699  14.187  1.00 19.77      B    C
ATOM   1611  CG  PRO   288       2.020 -26.783  14.126  1.00 19.23      B    C
ATOM   1612  C   PRO   288       4.925 -26.736  12.786  1.00 18.73      B    C
ATOM   1613  O   PRO   288       5.436 -27.179  13.829  1.00 17.76      B    O
ATOM   1614  N   LEU   289       5.341 -27.069  11.565  1.00 17.09      B    N
ATOM   1615  CA  LEU   289       6.372 -28.076  11.355  1.00 16.76      B    C
ATOM   1616  CB  LEU   289       5.741 -29.470  11.230  1.00 15.59      B    C
ATOM   1617  CG  LEU   289       4.678 -29.630  10.138  1.00 16.71      B    C
ATOM   1618  CD1 LEU   289       5.301 -30.269   8.897  1.00 17.39      B    C
ATOM   1619  CD2 LEU   289       3.525 -30.474  10.662  1.00 14.29      B    C
ATOM   1620  C   LEU   289       7.200 -27.766  10.120  1.00 16.66      B    C
ATOM   1621  O   LEU   289       6.795 -26.960   9.267  1.00 15.85      B    O
ATOM   1622  N   ALA   290       8.371 -28.399  10.046  1.00 17.02      B    N
ATOM   1623  CA  ALA   290       9.266 -28.245   8.910  1.00 17.79      B    C
ATOM   1624  CB  ALA   290      10.198 -27.063   9.127  1.00 16.37      B    C
ATOM   1625  C   ALA   290      10.080 -29.507   8.714  1.00 19.12      B    C
ATOM   1626  O   ALA   290      10.594 -30.089   9.682  1.00 18.31      B    O
ATOM   1627  N   GLY   291      10.181 -29.920   7.452  1.00 20.09      B    N
ATOM   1628  CA  GLY   291      11.138 -30.934   7.050  1.00 20.48      B    C
ATOM   1629  C   GLY   291      11.980 -30.388   5.915  1.00 20.72      B    C
ATOM   1630  O   GLY   291      11.786 -29.242   5.500  1.00 21.90      B    O
ATOM   1631  N   GLY   292      12.919 -31.186   5.412  1.00 20.93      B    N
ATOM   1632  CA  GLY   292      13.737 -30.734   4.299  1.00 20.49      B    C
ATOM   1633  C   GLY   292      12.862 -30.506   3.088  1.00 20.99      B    C
ATOM   1634  O   GLY   292      11.752 -31.020   3.027  1.00 22.41      B    O
ATOM   1635  N   TYR   293      13.340 -29.744   2.116  1.00 22.10      B    N
ATOM   1636  CA  TYR   293      12.499 -29.422   0.969  1.00 21.97      B    C
ATOM   1637  CB  TYR   293      13.293 -28.690  -0.106  1.00 22.23      B    C
ATOM   1638  CG  TYR   293      12.489 -28.396  -1.344  1.00 22.52      B    C
ATOM   1639  CD1 TYR   293      11.931 -27.137  -1.554  1.00 23.24      B    C
ATOM   1640  CE1 TYR   293      11.215 -26.853  -2.706  1.00 23.07      B    C
ATOM   1641  CD2 TYR   293      12.304 -29.367  -2.318  1.00 22.54      B    C
ATOM   1642  CE2 TYR   293      11.589 -29.095  -3.470  1.00 23.87      B    C
ATOM   1643  CZ  TYR   293      11.051 -27.839  -3.662  1.00 24.37      B    C
ATOM   1644  OH  TYR   293      10.373 -27.571  -4.829  1.00 24.90      B    O
ATOM   1645  C   TYR   293      11.897 -30.681   0.373  1.00 21.19      B    C
ATOM   1646  O   TYR   293      12.579 -31.688   0.186  1.00 21.55      B    O
ATOM   1647  N   SER   294      10.607 -30.608   0.078  1.00 20.40      B    N
ATOM   1648  CA  SER   294       9.865 -31.758  -0.397  1.00 19.74      B    C
ATOM   1649  CB  SER   294       8.982 -32.285   0.724  1.00 18.39      B    C
ATOM   1650  OG  SER   294       8.273 -33.436   0.313  1.00 19.04      B    O
ATOM   1651  C   SER   294       9.012 -31.412  -1.619  1.00 19.99      B    C
ATOM   1652  O   SER   294       8.284 -30.422  -1.625  1.00 19.62      B    O
ATOM   1653  N   ARG   295       9.110 -32.236  -2.658  1.00 20.06      B    N
ATOM   1654  CA  ARG   295       8.328 -32.012  -3.859  1.00 18.83      B    C
ATOM   1655  CB  ARG   295       8.908 -32.790  -5.033  1.00 16.98      B    C
ATOM   1656  CG  ARG   295       7.854 -33.248  -5.999  1.00 18.85      B    C
ATOM   1657  CD  ARG   295       8.040 -32.668  -7.377  1.00 20.56      B    C
ATOM   1658  NE  ARG   295       8.627 -33.644  -8.290  1.00 22.09      B    N
ATOM   1659  CZ  ARG   295       8.278 -33.790  -9.567  1.00 22.80      B    C
ATOM   1660  NH1 ARG   295       7.331 -33.023 -10.103  1.00 20.61      B    N
ATOM   1661  NH2 ARG   295       8.889 -34.707 -10.316  1.00 24.02      B    N
ATOM   1662  C   ARG   295       6.903 -32.457  -3.608  1.00 18.54      B    C
ATOM   1663  O   ARG   295       5.956 -31.735  -3.908  1.00 17.83      B    O
ATOM   1664  N   VAL   296       6.754 -33.652  -3.053  1.00 19.37      B    N
ATOM   1665  CA  VAL   296       5.425 -34.189  -2.812  1.00 19.78      B    C
ATOM   1666  CB  VAL   296       5.459 -35.674  -2.372  1.00 18.32      B    C
ATOM   1667  CG1 VAL   296       6.315 -35.852  -1.154  1.00 16.29      B    C
ATOM   1668  CG2 VAL   296       4.061 -36.142  -2.074  1.00 16.25      B    C
ATOM   1669  C   VAL   296       4.710 -33.375  -1.749  1.00 20.69      B    C
ATOM   1670  O   VAL   296       3.544 -33.021  -1.917  1.00 23.04      B    O
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ATOM   1671  N   LEU   297       5.405 -33.055  -0.664  1.00 20.71      B    N
ATOM   1672  CA  LEU   297       4.784 -32.286   0.408  1.00 20.16      B    C
ATOM   1673  CB  LEU   297       5.766 -32.061   1.561  1.00 19.83      B    C
ATOM   1674  CG  LEU   297       5.115 -31.355   2.748  1.00 19.79      B    C
ATOM   1675  CD1 LEU   297       3.837 -32.103   3.088  1.00 19.32      B    C
ATOM   1676  CD2 LEU   297       6.048 -31.300   3.942  1.00 17.12      B    C
ATOM   1677  C   LEU   297       4.330 -30.945  -0.133  1.00 19.04      B    C
ATOM   1678  O   LEU   297       3.187 -30.549   0.051  1.00 18.61      B    O
ATOM   1679  N   ASN   298       5.237 -30.258  -0.814  1.00 19.03      B    N
ATOM   1680  CA  ASN   298       4.924 -28.982  -1.438  1.00 19.13      B    C
ATOM   1681  CB  ASN   298       6.132 -28.481  -2.233  1.00 19.01      B    C
ATOM   1682  CG  ASN   298       7.070 -27.627  -1.397  1.00 20.79      B    C
ATOM   1683  OD1 ASN   298       7.070 -27.694  -0.161  1.00 19.14      B    O
ATOM   1684  ND2 ASN   298       7.878 -26.813  -2.072  1.00 21.14      B    N
ATOM   1685  C   ASN   298       3.712 -29.055  -2.358  1.00 19.17      B    C
ATOM   1686  O   ASN   298       2.981 -28.080  -2.502  1.00 20.60      B    O
ATOM   1687  N   ALA   299       3.512 -30.209  -2.991  1.00 20.42      B    N
ATOM   1688  CA  ALA   299       2.475 -30.370  -4.010  1.00 19.62      B    C
ATOM   1689  CB  ALA   299       2.808 -31.555  -4.892  1.00 18.75      B    C
ATOM   1690  C   ALA   299       1.113 -30.575  -3.350  1.00 20.32      B    C
ATOM   1691  O   ALA   299       0.110 -29.965  -3.740  1.00 18.83      B    O
ATOM   1692  N   ALA   300       1.090 -31.443  -2.347  1.00 19.46      B    N
ATOM   1693  CA  ALA   300      -0.084 -31.611  -1.521  1.00 19.11      B    C
ATOM   1694  CB  ALA   300       0.283 -32.382  -0.286  1.00 16.69      B    C
ATOM   1695  C   ALA   300      -0.622 -30.239  -1.140  1.00 20.79      B    C
ATOM   1696  O   ALA   300      -1.786 -29.918  -1.387  1.00 21.71      B    O
ATOM   1697  N   CYS   301       0.249 -29.426  -0.551  1.00 22.30      B    N
ATOM   1698  CA  CYS   301      -0.120 -28.099  -0.080  1.00 22.76      B    C
ATOM   1699  CB  CYS   301       1.070 -27.416   0.582  1.00 23.52      B    C
ATOM   1700  SG  CYS   301       1.582 -28.239   2.077  1.00 26.02      B    S
ATOM   1701  C   CYS   301      -0.618 -27.234  -1.200  1.00 22.64      B    C
ATOM   1702  O   CYS   301      -1.618 -26.556  -1.052  1.00 24.93      B    O
ATOM   1703  N   GLN   302       0.077 -27.245  -2.323  1.00 23.10      B    N
ATOM   1704  CA  GLN   302      -0.368 -26.448  -3.442  1.00 24.66      B    C
ATOM   1705  CB  GLN   302       0.572 -26.621  -4.615  1.00 26.73      B    C
ATOM   1706  CG  GLN   302       0.020 -26.012  -5.874  1.00 32.13      B    C
ATOM   1707  CD  GLN   302       0.813 -26.408  -7.091  1.00 36.06      B    C
ATOM   1708  OE1 GLN   302       0.632 -25.850  -8.176  1.00 37.94      B    O
ATOM   1709  NE2 GLN   302       1.708 -27.382  -6.921  1.00 39.51      B    N
ATOM   1710  C   GLN   302      -1.784 -26.816  -3.881  1.00 24.41      B    C
ATOM   1711  O   GLN   302      -2.604 -25.939  -4.146  1.00 25.13      B    O
ATOM   1712  N   ARG   303      -2.075 -28.109  -3.960  1.00 23.65      B    N
ATOM   1713  CA  ARG   303      -3.357 -28.553  -4.490  1.00 21.86      B    C
ATOM   1714  CB  ARG   303      -3.414 -30.069  -4.570  1.00 21.24      B    C
ATOM   1715  CG  ARG   303      -2.200 -30.679  -5.168  1.00 22.97      B    C
ATOM   1716  CD  ARG   303      -2.556 -31.516  -6.363  1.00 23.46      B    C
ATOM   1717  NE  ARG   303      -1.353 -31.932  -7.067  1.00 25.29      B    N
ATOM   1718  CZ  ARG   303      -1.188 -33.120  -7.632  1.00 26.86      B    C
ATOM   1719  NH1 ARG   303      -0.048 -33.399  -8.251  1.00 26.86      B    N
ATOM   1720  NH2 ARG   303      -2.158 -34.025  -7.578  1.00 27.68      B    N
ATOM   1721  C   ARG   303      -4.448 -28.094  -3.561  1.00 21.46      B    C
ATOM   1722  O   ARG   303      -5.502 -27.632  -3.994  1.00 22.14      B    O
ATOM   1723  N   LEU   304      -4.184 -28.247  -2.273  1.00 20.16      B    N
ATOM   1724  CA  LEU   304      -5.166 -27.946  -1.250  1.00 18.95      B    C
ATOM   1725  CB  LEU   304      -4.613 -28.345   0.113  1.00 17.05      B    C
ATOM   1726  CG  LEU   304      -5.650 -28.360   1.225  1.00 17.78      B    C
ATOM   1727  CD1 LEU   304      -6.880 -29.111   0.750  1.00 18.88      B    C
ATOM   1728  CD2 LEU   304      -5.056 -29.006   2.460  1.00 17.39      B    C
ATOM   1729  C   LEU   304      -5.498 -26.458  -1.262  1.00 17.86      B    C
ATOM   1730  O   LEU   304      -6.647 -26.062  -1.060  1.00 16.37      B    O
ATOM   1731  N   ALA   305      -4.474 -25.645  -1.503  1.00 18.14      B    N
ATOM   1732  CA  ALA   305      -4.595 -24.196  -1.499  1.00 18.65      B    C
ATOM   1733  CB  ALA   305      -3.223 -23.568  -1.606  1.00 18.26      B    C
ATOM   1734  C   ALA   305      -5.452 -23.755  -2.664  1.00 19.54      B    C
ATOM   1735  O   ALA   305      -6.277 -22.854  -2.537  1.00 19.94      B    O
ATOM   1736  N   ARG   306      -5.238 -24.399  -3.803  1.00 20.90      B    N
ATOM   1737  CA  ARG   306      -6.015 -24.122  -4.996  1.00 23.22      B    C
ATOM   1738  CB  ARG   306      -5.258 -24.629  -6.217  1.00 26.07      B    C
ATOM   1739  CG  ARG   306      -3.873 -24.036  -6.332  1.00 32.51      B    C
ATOM   1740  CD  ARG   306      -2.949 -24.978  -7.079  1.00 40.27      B    C
ATOM   1741  NE  ARG   306      -2.167 -24.284  -8.100  1.00 46.05      B    N
ATOM   1742  CZ  ARG   306      -1.806 -24.827  -9.261  1.00 48.83      B    C
ATOM   1743  NH1 ARG   306      -1.094 -24.120 -10.133  1.00 50.33      B    N
ATOM   1744  NH2 ARG   306      -2.157 -26.076  -9.552  1.00 49.46      B    N
ATOM   1745  C   ARG   306      -7.400 -24.764  -4.923  1.00 21.55      B    C
ATOM   1746  O   ARG   306      -8.291 -24.445  -5.710  1.00 22.43      B    O
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ATOM   1747  N   ALA   307      -7.581 -25.668  -3.974  1.00 19.75      B    N
ATOM   1748  CA  ALA   307      -8.861 -26.329  -3.807  1.00 18.30      B    C
ATOM   1749  CB  ALA   307      -8.662 -27.684  -3.143  1.00 18.38      B    C
ATOM   1750  C   ALA   307      -9.737 -25.435  -2.946  1.00 18.11      B    C
ATOM   1751  O   ALA   307     -10.925 -25.697  -2.752  1.00 18.26      B    O
ATOM   1752  N   GLY   308      -9.131 -24.373  -2.427  1.00 18.07      B    N
ATOM   1753  CA  GLY   308      -9.883 -23.397  -1.670  1.00 17.27      B    C
ATOM   1754  C   GLY   308      -9.464 -23.190  -0.224  1.00 17.47      B    C
ATOM   1755  O   GLY   308      -9.854 -22.199   0.371  1.00 18.26      B    O
ATOM   1756  N   VAL   309      -8.679 -24.092   0.358  1.00 17.85      B    N
ATOM   1757  CA  VAL   309      -8.288 -23.942   1.762  1.00 17.40      B    C
ATOM   1758  CB  VAL   309      -8.113 -25.327   2.426  1.00 15.52      B    C
ATOM   1759  CG1 VAL   309      -7.427 -25.197   3.750  1.00 16.49      B    C
ATOM   1760  CG2 VAL   309      -9.465 -25.941   2.660  1.00 14.46      B    C
ATOM   1761  C   VAL   309      -7.039 -23.065   2.012  1.00 17.87      B    C
ATOM   1762  O   VAL   309      -6.136 -22.986   1.179  1.00 19.05      B    O
ATOM   1763  N   VAL   310      -7.020 -22.385   3.159  1.00 17.38      B    N
ATOM   1764  CA  VAL   310      -5.918 -21.508   3.550  1.00 18.63      B    C
ATOM   1765  CB  VAL   310      -6.408 -20.376   4.464  1.00 19.64      B    C
ATOM   1766  CG1 VAL   310      -5.227 -19.605   5.018  1.00 18.09      B    C
ATOM   1767  CG2 VAL   310      -7.334 -19.464   3.702  1.00 18.46      B    C
ATOM   1768  C   VAL   310      -4.854 -22.270   4.318  1.00 19.53      B    C
ATOM   1769  O   VAL   310      -5.146 -22.917   5.327  1.00 19.08      B    O
ATOM   1770  N   LEU   311      -3.612 -22.189   3.857  1.00 20.49      B    N
ATOM   1771  CA  LEU   311      -2.539 -22.836   4.601  1.00 20.59      B    C
ATOM   1772  CB  LEU   311      -1.847 -23.898   3.729  1.00 21.10      B    C
ATOM   1773  CG  LEU   311      -2.719 -25.114   3.374  1.00 20.77      B    C
ATOM   1774  CD1 LEU   311      -3.169 -25.035   1.924  1.00 19.01      B    C
ATOM   1775  CD2 LEU   311      -1.929 -26.384   3.595  1.00 19.85      B    C
ATOM   1776  C   LEU   311      -1.523 -21.846   5.170  1.00 19.52      B    C
ATOM   1777  O   LEU   311      -0.989 -20.984   4.465  1.00 18.71      B    O
ATOM   1778  N   VAL   312      -1.287 -21.971   6.469  1.00 19.75      B    N
ATOM   1779  CA  VAL   312      -0.284 -21.166   7.165  1.00 20.13      B    C
ATOM   1780  CB  VAL   312      -0.954 -20.298   8.283  1.00 21.70      B    C
ATOM   1781  CG1 VAL   312       0.103 -19.499   9.048  1.00 20.27      B    C
ATOM   1782  CG2 VAL   312      -1.998 -19.364   7.660  1.00 18.86      B    C
ATOM   1783  C   VAL   312       0.774 -22.086   7.784  1.00 18.09      B    C
ATOM   1784  O   VAL   312       0.442 -23.018   8.528  1.00 15.74      B    O
ATOM   1785  N   THR   313       2.043 -21.833   7.463  1.00 17.81      B    N
ATOM   1786  CA  THR   313       3.130 -22.664   8.001  1.00 17.87      B    C
ATOM   1787  CB  THR   313       3.775 -23.550   6.924  1.00 16.57      B    C
ATOM   1788  OG1 THR   313       4.473 -24.615   7.568  1.00 15.42      B    O
ATOM   1789  CG2 THR   313       4.772 -22.752   6.088  1.00 13.87      B    C
ATOM   1790  C   THR   313       4.265 -21.899   8.670  1.00 17.42      B    C
ATOM   1791  O   THR   313       4.567 -20.752   8.306  1.00 19.31      B    O
ATOM   1792  N   ALA   314       4.893 -22.551   9.645  1.00 15.83      B    N
ATOM   1793  CA  ALA   314       6.148 -22.070  10.220  1.00 14.33      B    C
ATOM   1794  CB  ALA   314       6.611 -23.014  11.316  1.00 12.97      B    C
ATOM   1795  C   ALA   314       7.231 -21.944   9.147  1.00 13.75      B    C
ATOM   1796  O   ALA   314       7.228 -22.653   8.139  1.00 12.56      B    O
ATOM   1797  N   ALA   315       8.152 -21.016   9.366  1.00 14.84      B    N
ATOM   1798  CA  ALA   315       9.267 -20.818   8.455  1.00 15.19      B    C
ATOM   1799  CB  ALA   315       9.764 -19.384   8.563  1.00 12.98      B    C
ATOM   1800  C   ALA   315      10.398 -21.803   8.793  1.00 16.33      B    C
ATOM   1801  O   ALA   315      11.223 -22.147   7.933  1.00 16.84      B    O
ATOM   1802  N   GLY   316      10.416 -22.251  10.049  1.00 15.86      B    N
ATOM   1803  CA  GLY   316      11.460 -23.134  10.522  1.00 15.85      B    C
ATOM   1804  C   GLY   316      12.487 -22.390  11.352  1.00 17.04      B    C
ATOM   1805  O   GLY   316      12.662 -21.181  11.191  1.00 15.26      B    O
ATOM   1806  N   ASN   317      13.173 -23.123  12.230  1.00 18.37      B    N
ATOM   1807  CA  ASN   317      14.084 -22.530  13.205  1.00 20.16      B    C
ATOM   1808  CB  ASN   317      13.729 -23.023  14.600  1.00 17.67      B    C
ATOM   1809  CG  ASN   317      12.270 -22.864  14.894  1.00 17.51      B    C
ATOM   1810  OD1 ASN   317      11.632 -21.947  14.385  1.00 15.76      B    O
ATOM   1811  ND2 ASN   317      11.721 -23.758  15.709  1.00 19.11      B    N
ATOM   1812  C   ASN   317      15.535 -22.853  12.897  1.00 20.80      B    C
ATOM   1813  O   ASN   317      16.302 -23.250  13.779  1.00 20.23      B    O
ATOM   1814  N   PHE   318      15.899 -22.663  11.635  1.00 21.80      B    N
ATOM   1815  CA  PHE   318      17.167 -23.148  11.126  1.00 24.16      B    C
ATOM   1816  CB  PHE   318      16.905 -24.123   9.979  1.00 24.38      B    C
ATOM   1817  CG  PHE   318      16.091 -25.325  10.383  1.00 25.06      B    C
ATOM   1818  CD1 PHE   318      16.578 -26.227  11.319  1.00 23.42      B    C
ATOM   1819  CD2 PHE   318      14.847 -25.562   9.816  1.00 24.55      B    C
ATOM   1820  CE1 PHE   318      15.839 -27.341  11.681  1.00 23.94      B    C
ATOM   1821  CE2 PHE   318      14.104 -26.676  10.175  1.00 22.84      B    C
ATOM   1822  CZ  PHE   318      14.601 -27.565  11.108  1.00 22.93      B    C
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ATOM   1823  C   PHE   318      18.106 -22.038  10.666  1.00 25.02      B    C
ATOM   1824  O   PHE   318      19.162 -22.312  10.109  1.00 26.36      B    O
ATOM   1825  N   ARG   319      17.716 -20.789  10.893  1.00 25.77      B    N
ATOM   1826  CA  ARG   319      18.570 -19.654  10.571  1.00 26.61      B    C
ATOM   1827  CB  ARG   319      19.788 -19.643  11.508  1.00 28.47      B    C
ATOM   1828  CG  ARG   319      20.420 -18.273  11.749  1.00 32.16      B    C
ATOM   1829  CD  ARG   319      21.502 -18.345  12.822  1.00 36.07      B    C
ATOM   1830  NE  ARG   319      21.972 -17.023  13.247  1.00 42.52      B    N
ATOM   1831  CZ  ARG   319      23.231 -16.735  13.597  1.00 45.72      B    C
ATOM   1832  NH1 ARG   319      24.169 -17.674  13.579  1.00 44.82      B    N
ATOM   1833  NH2 ARG   319      23.560 -15.499  13.966  1.00 45.86      B    N
ATOM   1834  C   ARG   319      19.019 -19.766   9.115  1.00 26.48      B    C
ATOM   1835  O   ARG   319      20.203 -19.627   8.808  1.00 26.94      B    O
ATOM   1836  N   ASP   320      18.066 -20.022   8.221  1.00 25.91      B    N
ATOM   1837  CA  ASP   320      18.377 -20.386   6.839  1.00 25.38      B    C
ATOM   1838  CB  ASP   320      18.482 -21.907   6.716  1.00 27.38      B    C
ATOM   1839  CG  ASP   320      19.283 -22.347   5.492  1.00 31.81      B    C
ATOM   1840  OD1 ASP   320      19.625 -21.483   4.646  1.00 30.34      B    O
ATOM   1841  OD2 ASP   320      19.572 -23.567   5.381  1.00 34.03      B    O
ATOM   1842  C   ASP   320      17.310 -19.879   5.882  1.00 23.72      B    C
ATOM   1843  O   ASP   320      16.259 -19.420   6.311  1.00 24.64      B    O
ATOM   1844  N   ASP   321      17.578 -19.959   4.584  1.00 21.64      B    N
ATOM   1845  CA  ASP   321      16.545 -19.676   3.604  1.00 20.23      B    C
ATOM   1846  CB  ASP   321      17.118 -19.655   2.187  1.00 20.01      B    C
ATOM   1847  CG  ASP   321      16.160 -19.032   1.177  1.00 23.00      B    C
ATOM   1848  OD1 ASP   321      15.034 -18.631   1.557  1.00 25.85      B    O
ATOM   1849  OD2 ASP   321      16.529 -18.936  -0.009  1.00 24.40      B    O
ATOM   1850  C   ASP   321      15.500 -20.768   3.715  1.00 20.33      B    C
ATOM   1851  O   ASP   321      15.785 -21.937   3.470  1.00 20.93      B    O
ATOM   1852  N   ALA   322      14.289 -20.376   4.092  1.00 20.81      B    N
ATOM   1853  CA  ALA   322      13.189 -21.311   4.245  1.00 20.82      B    C
ATOM   1854  CB  ALA   322      12.027 -20.619   4.903  1.00 20.87      B    C
ATOM   1855  C   ALA   322      12.773 -21.879   2.896  1.00 22.07      B    C
ATOM   1856  O   ALA   322      11.925 -22.770   2.814  1.00 24.23      B    O
ATOM   1857  N   CYS   323      13.380 -21.362   1.836  1.00 21.62      B    N
ATOM   1858  CA  CYS   323      13.189 -21.906   0.505  1.00 21.78      B    C
ATOM   1859  C   CYS   323      13.745 -23.327   0.420  1.00 20.87      B    C
ATOM   1860  O   CYS   323      13.523 -24.041  -0.562  1.00 20.76      B    O
ATOM   1861  CB  CYS   323      13.883 -21.013  -0.517  1.00 23.38      B    C
ATOM   1862  SG  CYS   323      12.973 -19.497  -0.993  1.00 34.53      B    S
ATOM   1863  N   LEU   324      14.473 -23.729   1.457  1.00 19.41      B    N
ATOM   1864  CA  LEU   324      15.129 -25.034   1.485  1.00 17.45      B    C
ATOM   1865  CB  LEU   324      16.580 -24.895   1.928  1.00 14.89      B    C
ATOM   1866  CG  LEU   324      17.426 -23.921   1.129  1.00 14.62      B    C
ATOM   1867  CD1 LEU   324      18.812 -23.877   1.719  1.00 12.16      B    C
ATOM   1868  CD2 LEU   324      17.470 -24.357  -0.324  1.00 16.39      B    C
ATOM   1869  C   LEU   324      14.436 -26.000   2.426  1.00 17.67      B    C
ATOM   1870  O   LEU   324      14.998 -27.046   2.769  1.00 17.60      B    O
ATOM   1871  N   TYR   325      13.231 -25.643   2.862  1.00 16.35      B    N
ATOM   1872  CA  TYR   325      12.460 -26.512   3.744  1.00 15.57      B    C
ATOM   1873  CB  TYR   325      12.534 -26.011   5.178  1.00 14.14      B    C
ATOM   1874  CG  TYR   325      13.949 -25.807   5.651  1.00 14.56      B    C
ATOM   1875  CD1 TYR   325      14.620 -26.806   6.355  1.00 12.52      B    C
ATOM   1876  CE1 TYR   325      15.915 -26.636   6.755  1.00 11.36      B    C
ATOM   1877  CD2 TYR   325      14.626 -24.631   5.363  1.00 10.83      B    C
ATOM   1878  CE2 TYR   325      15.916 -24.455   5.753  1.00 12.48      B    C
ATOM   1879  CZ  TYR   325      16.563 -25.459   6.449  1.00 13.44      B    C
ATOM   1880  OH  TYR   325      17.869 -25.275   6.839  1.00 14.00      B    O
ATOM   1881  C   TYR   325      11.017 -26.553   3.303  1.00 16.17      B    C
ATOM   1882  O   TYR   325      10.554 -25.661   2.593  1.00 19.07      B    O
ATOM   1883  N   SER   326      10.307 -27.594   3.718  1.00 15.32      B    N
ATOM   1884  CA  SER   326       8.884 -27.706   3.436  1.00 14.45      B    C
ATOM   1885  CB  SER   326       8.643 -28.777   2.365  1.00 13.51      B    C
ATOM   1886  OG  SER   326       9.232 -28.396   1.136  1.00  9.68      B    O
ATOM   1887  C   SER   326       8.098 -28.036   4.702  1.00 14.43      B    C
ATOM   1888  O   SER   326       8.596 -28.721   5.593  1.00 13.96      B    O
ATOM   1889  N   PRO   327       6.846 -27.557   4.791  1.00 16.56      B    N
ATOM   1890  CD  PRO   327       5.970 -27.849   5.938  1.00 16.61      B    C
ATOM   1891  CA  PRO   327       6.131 -26.829   3.729  1.00 17.34      B    C
ATOM   1892  CB  PRO   327       4.669 -26.884   4.171  1.00 15.73      B    C
ATOM   1893  CG  PRO   327       4.735 -27.040   5.641  1.00 16.44      B    C
ATOM   1894  C   PRO   327       6.582 -25.397   3.456  1.00 18.31      B    C
ATOM   1895  O   PRO   327       6.117 -24.779   2.501  1.00 18.41      B    O
ATOM   1896  N   ALA   328       7.478 -24.872   4.286  1.00 20.01      B    N
ATOM   1897  CA  ALA   328       7.811 -23.450   4.231  1.00 22.14      B    C
ATOM   1898  CB  ALA   328       9.031 -23.170   5.107  1.00 21.67      B    C
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ATOM   1899  C   ALA   328       8.056 -22.946   2.799  1.00 23.20      B    C
ATOM   1900  O   ALA   328       7.640 -21.835   2.438  1.00 23.95      B    O
ATOM   1901  N   SER   329       8.711 -23.773   1.986  1.00 22.51      B    N
ATOM   1902  CA  SER   329       9.159 -23.358   0.662  1.00 22.34      B    C
ATOM   1903  CB  SER   329      10.296 -24.261   0.199  1.00 21.26      B    C
ATOM   1904  OG  SER   329       9.830 -25.579  -0.021  1.00 18.71      B    O
ATOM   1905  C   SER   329       8.054 -23.355  -0.399  1.00 23.40      B    C
ATOM   1906  O   SER   329       8.228 -22.787  -1.476  1.00 23.51      B    O
ATOM   1907  N   ALA   330       6.926 -23.993  -0.100  1.00 25.31      B    N
ATOM   1908  CA  ALA   330       5.835 -24.107  -1.064  1.00 26.56      B    C
ATOM   1909  CB  ALA   330       4.822 -25.133  -0.590  1.00 27.06      B    C
ATOM   1910  C   ALA   330       5.160 -22.758  -1.250  1.00 27.53      B    C
ATOM   1911  O   ALA   330       4.727 -22.133  -0.284  1.00 29.15      B    O
ATOM   1912  N   PRO   331       5.065 -22.293  -2.503  1.00 28.24      B    N
ATOM   1913  CD  PRO   331       5.431 -23.095  -3.682  1.00 28.39      B    C
ATOM   1914  CA  PRO   331       4.718 -20.909  -2.866  1.00 29.18      B    C
ATOM   1915  CB  PRO   331       4.844 -20.891  -4.391  1.00 28.66      B    C
ATOM   1916  CG  PRO   331       5.727 -22.051  -4.711  1.00 28.90      B    C
ATOM   1917  C   PRO   331       3.326 -20.464  -2.416  1.00 29.39      B    C
ATOM   1918  O   PRO   331       3.115 -19.296  -2.078  1.00 29.76      B    O
ATOM   1919  N   GLU   332       2.384 -21.400  -2.420  1.00 28.61      B    N
ATOM   1920  CA  GLU   332       0.983 -21.080  -2.211  1.00 28.81      B    C
ATOM   1921  CB  GLU   332       0.121 -22.089  -2.970  1.00 31.96      B    C
ATOM   1922  CG  GLU   332       0.851 -23.396  -3.296  1.00 36.23      B    C
ATOM   1923  CD  GLU   332       1.701 -23.306  -4.566  1.00 39.36      B    C
ATOM   1924  OE1 GLU   332       1.169 -22.910  -5.630  1.00 41.08      B    O
ATOM   1925  OE2 GLU   332       2.904 -23.639  -4.503  1.00 40.19      B    O
ATOM   1926  C   GLU   332       0.637 -21.087  -0.722  1.00 27.73      B    C
ATOM   1927  O   GLU   332      -0.452 -20.683  -0.318  1.00 26.94      B    O
ATOM   1928  N   VAL   333       1.575 -21.554   0.091  1.00 26.86      B    N
ATOM   1929  CA  VAL   333       1.422 -21.524   1.541  1.00 25.32      B    C
ATOM   1930  CB  VAL   333       2.269 -22.633   2.227  1.00 23.61      B    C
ATOM   1931  CG1 VAL   333       2.247 -22.441   3.732  1.00 23.08      B    C
ATOM   1932  CG2 VAL   333       1.727 -24.009   1.873  1.00 23.25      B    C
ATOM   1933  C   VAL   333       1.848 -20.166   2.101  1.00 24.40      B    C
ATOM   1934  O   VAL   333       2.781 -19.529   1.596  1.00 24.78      B    O
ATOM   1935  N   ILE   334       1.156 -19.724   3.145  1.00 23.38      B    N
ATOM   1936  CA  ILE   334       1.588 -18.546   3.878  1.00 22.82      B    C
ATOM   1937  CB  ILE   334       0.413 -17.867   4.582  1.00 23.36      B    C
ATOM   1938  CG2 ILE   334       0.908 -16.682   5.373  1.00 21.37      B    C
ATOM   1939  CG1 ILE   334      -0.617 -17.418   3.546  1.00 22.38      B    C
ATOM   1940  CD1 ILE   334      -1.908 -16.964   4.149  1.00 19.76      B    C
ATOM   1941  C   ILE   334       2.626 -18.950   4.910  1.00 21.94      B    C
ATOM   1942  O   ILE   334       2.337 -19.676   5.863  1.00 20.41      B    O
ATOM   1943  N   THR   335       3.844 -18.471   4.694  1.00 21.71      B    N
ATOM   1944  CA  THR   335       5.010 -18.951   5.419  1.00 22.66      B    C
ATOM   1945  CB  THR   335       6.141 -19.283   4.426  1.00 24.07      B    C
ATOM   1946  OG1 THR   335       5.600 -20.019   3.315  1.00 24.80      B    O
ATOM   1947  CG2 THR   335       7.219 -20.116   5.100  1.00 23.59      B    C
ATOM   1948  C   THR   335       5.463 -17.861   6.394  1.00 22.37      B    C
ATOM   1949  O   THR   335       5.772 -16.741   5.988  1.00 21.19      B    O
ATOM   1950  N   VAL   336       5.486 -18.192   7.682  1.00 22.56      B    N
ATOM   1951  CA  VAL   336       5.552 -17.173   8.731  1.00 22.60      B    C
ATOM   1952  CB  VAL   336       4.355 -17.296   9.692  1.00 22.03      B    C
ATOM   1953  CG1 VAL   336       4.359 -16.147  10.689  1.00 19.46      B    C
ATOM   1954  CG2 VAL   336       3.069 -17.332   8.897  1.00 21.19      B    C
ATOM   1955  C   VAL   336       6.824 -17.242   9.566  1.00 22.61      B    C
ATOM   1956  O   VAL   336       7.119 -18.276  10.160  1.00 22.75      B    O
ATOM   1957  N   GLY   337       7.553 -16.127   9.623  1.00 23.52      B    N
ATOM   1958  CA  GLY   337       8.746 -16.036  10.454  1.00 24.53      B    C
ATOM   1959  C   GLY   337       8.500 -15.342  11.784  1.00 25.08      B    C
ATOM   1960  O   GLY   337       7.451 -14.745  11.996  1.00 26.14      B    O
ATOM   1961  N   ALA   338       9.463 -15.413  12.691  1.00 25.21      B    N
ATOM   1962  CA  ALA   338       9.243 -14.906  14.036  1.00 25.87      B    C
ATOM   1963  CB  ALA   338       9.544 -15.990  15.047  1.00 25.68      B    C
ATOM   1964  C   ALA   338      10.081 -13.674  14.340  1.00 27.22      B    C
ATOM   1965  O   ALA   338      11.271 -13.641  14.033  1.00 28.69      B    O
ATOM   1966  N   THR   339       9.452 -12.665  14.943  1.00 27.73      B    N
ATOM   1967  CA  THR   339      10.165 -11.528  15.529  1.00 27.88      B    C
ATOM   1968  CB  THR   339       9.680 -10.187  14.944  1.00 28.43      B    C
ATOM   1969  OG1 THR   339       8.410  -9.838  15.515  1.00 30.24      B    O
ATOM   1970  CG2 THR   339       9.535 -10.297  13.438  1.00 27.60      B    C
ATOM   1971  C   THR   339       9.912 -11.514  17.038  1.00 28.11      B    C
ATOM   1972  O   THR   339       9.127 -12.313  17.545  1.00 29.32      B    O
ATOM   1973  N   ASN   340      10.576 -10.612  17.754  1.00 28.25      B    N
ATOM   1974  CA  ASN   340      10.390 -10.507  19.197  1.00 28.64      B    C
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ATOM   1975  CB  ASN   340      11.683 -10.900  19.937  1.00 26.79      B    C
ATOM   1976  CG  ASN   340      12.780  -9.837  19.842  1.00 24.82      B    C
ATOM   1977  OD1 ASN   340      12.778  -8.987  18.954  1.00 23.33      B    O
ATOM   1978  ND2 ASN   340      13.718  -9.889  20.768  1.00 21.41      B    N
ATOM   1979  C   ASN   340       9.947  -9.105  19.614  1.00 30.56      B    C
ATOM   1980  O   ASN   340       9.662  -8.253  18.776  1.00 30.36      B    O
ATOM   1981  N   ALA   341       9.886  -8.874  20.917  1.00 32.81      B    N
ATOM   1982  CA  ALA   341       9.383  -7.618  21.435  1.00 34.72      B    C
ATOM   1983  CB  ALA   341       9.352  -7.677  22.943  1.00 33.86      B    C
ATOM   1984  C   ALA   341      10.193  -6.404  20.959  1.00 37.05      B    C
ATOM   1985  O   ALA   341       9.686  -5.281  20.932  1.00 37.22      B    O
ATOM   1986  N   GLN   342      11.449  -6.617  20.582  1.00 39.17      B    N
ATOM   1987  CA  GLN   342      12.237  -5.518  20.037  1.00 41.65      B    C
ATOM   1988  CB  GLN   342      13.682  -5.544  20.558  1.00 43.43      B    C
ATOM   1989  CG  GLN   342      14.069  -6.779  21.353  1.00 47.47      B    C
ATOM   1990  CD  GLN   342      13.394  -6.830  22.709  1.00 49.49      B    C
ATOM   1991  OE1 GLN   342      13.198  -7.907  23.289  1.00 48.68      B    O
ATOM   1992  NE2 GLN   342      13.024  -5.660  23.223  1.00 50.00      B    N
ATOM   1993  C   GLN   342      12.239  -5.576  18.518  1.00 43.22      B    C
ATOM   1994  O   GLN   342      13.174  -5.104  17.869  1.00 43.77      B    O
ATOM   1995  N   ASP   343      11.189  -6.170  17.956  1.00 43.93      B    N
ATOM   1996  CA  ASP   343      10.986  -6.170  16.509  1.00 43.53      B    C
ATOM   1997  CB  ASP   343      10.524  -4.775  16.050  1.00 43.99      B    C
ATOM   1998  CG  ASP   343       9.011  -4.565  16.209  1.00 44.42      B    C
ATOM   1999  OD1 ASP   343       8.245  -5.558  16.276  1.00 42.52      B    O
ATOM   2000  OD2 ASP   343       8.587  -3.393  16.260  1.00 44.78      B    O
ATOM   2001  C   ASP   343      12.244  -6.601  15.737  1.00 42.39      B    C
ATOM   2002  O   ASP   343      12.546  -6.085  14.657  1.00 42.07      B    O
ATOM   2003  N   GLN   344      12.976  -7.552  16.302  1.00 41.78      B    N
ATOM   2004  CA  GLN   344      14.134  -8.127  15.629  1.00 41.56      B    C
ATOM   2005  CB  GLN   344      15.408  -7.797  16.396  1.00 44.09      B    C
ATOM   2006  CG  GLN   344      15.384  -8.247  17.839  1.00 48.25      B    C
ATOM   2007  CD  GLN   344      16.394  -7.499  18.687  1.00 50.65      B    C
ATOM   2008  OE1 GLN   344      16.657  -7.863  19.840  1.00 51.73      B    O
ATOM   2009  NE2 GLN   344      16.968  -6.440  18.118  1.00 51.25      B    N
ATOM   2010  C   GLN   344      13.963  -9.630  15.540  1.00 38.96      B    C
ATOM   2011  O   GLN   344      13.247 -10.227  16.341  1.00 38.19      B    O
ATOM   2012  N   PRO   345      14.614 -10.263  14.556  1.00 37.58      B    N
ATOM   2013  CD  PRO   345      15.492  -9.635  13.555  1.00 36.39      B    C
ATOM   2014  CA  PRO   345      14.416 -11.698  14.298  1.00 37.16      B    C
ATOM   2015  CB  PRO   345      15.331 -11.980  13.101  1.00 35.35      B    C
ATOM   2016  CG  PRO   345      15.514 -10.648  12.446  1.00 35.43      B    C
ATOM   2017  C   PRO   345      14.759 -12.573  15.510  1.00 37.13      B    C
ATOM   2018  O   PRO   345      15.782 -12.364  16.162  1.00 39.08      B    O
ATOM   2019  N   VAL   346      13.910 -13.551  15.811  1.00 36.05      B    N
ATOM   2020  CA  VAL   346      14.149 -14.421  16.957  1.00 34.82      B    C
ATOM   2021  CB  VAL   346      12.915 -15.281  17.287  1.00 33.18      B    C
ATOM   2022  CG1 VAL   346      13.244 -16.221  18.428  1.00 33.07      B    C
ATOM   2023  CG2 VAL   346      11.740 -14.401  17.664  1.00 31.64      B    C
ATOM   2024  C   VAL   346      15.333 -15.359  16.745  1.00 35.10      B    C
ATOM   2025  O   VAL   346      15.385 -16.111  15.770  1.00 34.39      B    O
ATOM   2026  N   THR   347      16.285 -15.311  17.669  1.00 35.85      B    N
ATOM   2027  CA  THR   347      17.388 -16.264  17.671  1.00 37.77      B    C
ATOM   2028  CB  THR   347      18.718 -15.599  18.074  1.00 36.41      B    C
ATOM   2029  OG1 THR   347      18.567 -14.985  19.358  1.00 35.69      B    O
ATOM   2030  CG2 THR   347      19.129 -14.554  17.050  1.00 33.79      B    C
ATOM   2031  C   THR   347      17.084 -17.381  18.661  1.00 39.16      B    C
ATOM   2032  O   THR   347      16.755 -17.124  19.819  1.00 39.34      B    O
ATOM   2033  N   LEU   348      17.188 -18.620  18.196  1.00 40.40      B    N
ATOM   2034  CA  LEU   348      16.839 -19.770  19.014  1.00 42.15      B    C
ATOM   2035  CB  LEU   348      15.727 -20.580  18.334  1.00 42.90      B    C
ATOM   2036  CG  LEU   348      14.364 -19.887  18.207  1.00 44.13      B    C
ATOM   2037  CD1 LEU   348      13.468 -20.686  17.284  1.00 44.95      B    C
ATOM   2038  CD2 LEU   348      13.725 -19.739  19.584  1.00 44.34      B    C
ATOM   2039  C   LEU   348      18.076 -20.631  19.221  1.00 42.53      B    C
ATOM   2040  O   LEU   348      18.481 -21.390  18.333  1.00 44.15      B    O
ATOM   2041  N   GLY   349      18.680 -20.514  20.396  1.00 41.43      B    N
ATOM   2042  CA  GLY   349      19.985 -21.107  20.581  1.00 40.94      B    C
ATOM   2043  C   GLY   349      20.931 -20.405  19.636  1.00 40.49      B    C
ATOM   2044  O   GLY   349      20.898 -19.177  19.536  1.00 40.57      B    O
ATOM   2045  N   THR   350      21.761 -21.172  18.934  1.00 40.43      B    N
ATOM   2046  CA  THR   350      22.649 -20.602  17.923  1.00 40.06      B    C
ATOM   2047  CB  THR   350      23.967 -21.395  17.796  1.00 41.33      B    C
ATOM   2048  OG1 THR   350      23.689 -22.717  17.311  1.00 42.85      B    O
ATOM   2049  CG2 THR   350      24.679 -21.468  19.142  1.00 39.97      B    C
ATOM   2050  C   THR   350      21.976 -20.596  16.557  1.00 38.80      B    C
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ATOM   2051  O   THR   350      22.599 -20.288  15.543  1.00 39.80      B    O
ATOM   2052  N   LEU   351      20.702 -20.960  16.533  1.00 36.87      B    N
ATOM   2053  CA  LEU   351      19.916 -20.858  15.320  1.00 35.16      B    C
ATOM   2054  CB  LEU   351      19.330 -22.236  14.982  1.00 34.71      B    C
ATOM   2055  CG  LEU   351      20.325 -23.192  14.299  1.00 32.23      B    C
ATOM   2056  CD1 LEU   351      20.033 -24.639  14.626  1.00 29.33      B    C
ATOM   2057  CD2 LEU   351      20.247 -22.975  12.807  1.00 32.45      B    C
ATOM   2058  C   LEU   351      18.825 -19.788  15.484  1.00 34.05      B    C
ATOM   2059  O   LEU   351      18.970 -18.858  16.284  1.00 33.71      B    O
ATOM   2060  N   GLY   352      17.747 -19.899  14.717  1.00 33.23      B    N
ATOM   2061  CA  GLY   352      16.666 -18.938  14.839  1.00 30.44      B    C
ATOM   2062  C   GLY   352      15.731 -18.988  13.652  1.00 28.36      B    C
ATOM   2063  O   GLY   352      15.681 -19.984  12.934  1.00 27.74      B    O
ATOM   2064  N   THR   353      14.991 -17.907  13.441  1.00 25.82      B    N
ATOM   2065  CA  THR   353      13.991 -17.868  12.386  1.00 23.39      B    C
ATOM   2066  CB  THR   353      13.177 -16.565  12.446  1.00 23.46      B    C
ATOM   2067  OG1 THR   353      12.050 -16.652  11.559  1.00 22.87      B    O
ATOM   2068  CG2 THR   353      14.054 -15.387  12.031  1.00 23.22      B    C
ATOM   2069  C   THR   353      14.657 -17.954  11.020  1.00 21.85      B    C
ATOM   2070  O   THR   353      15.659 -17.290  10.768  1.00 23.19      B    O
ATOM   2071  N   ASN   354      14.099 -18.776  10.142  1.00 19.78      B    N
ATOM   2072  CA  ASN   354      14.513 -18.776   8.751  1.00 18.88      B    C
ATOM   2073  CB  ASN   354      13.905 -19.981   8.029  1.00 19.41      B    C
ATOM   2074  CG  ASN   354      14.733 -21.232   8.203  1.00 18.91      B    C
ATOM   2075  OD1 ASN   354      15.835 -21.175   8.720  1.00 22.77      B    O
ATOM   2076  ND2 ASN   354      14.211 -22.363   7.765  1.00 20.48      B    N
ATOM   2077  C   ASN   354      14.057 -17.464   8.114  1.00 19.36      B    C
ATOM   2078  O   ASN   354      13.425 -16.641   8.775  1.00 18.72      B    O
ATOM   2079  N   PHE   355      14.380 -17.258   6.842  1.00 20.03      B    N
ATOM   2080  CA  PHE   355      14.126 -15.974   6.191  1.00 22.21      B    C
ATOM   2081  CB  PHE   355      15.174 -14.960   6.638  1.00 19.82      B    C
ATOM   2082  CG  PHE   355      16.550 -15.546   6.737  1.00 20.47      B    C
ATOM   2083  CD1 PHE   355      17.080 -15.893   7.972  1.00 19.70      B    C
ATOM   2084  CD2 PHE   355      17.281 -15.832   5.590  1.00 19.94      B    C
ATOM   2085  CE1 PHE   355      18.305 -16.521   8.064  1.00 18.39      B    C
ATOM   2086  CE2 PHE   355      18.504 -16.457   5.676  1.00 19.14      B    C
ATOM   2087  CZ  PHE   355      19.016 -16.804   6.918  1.00 18.75      B    C
ATOM   2088  C   PHE   355      14.188 -16.140   4.672  1.00 24.66      B    C
ATOM   2089  O   PHE   355      14.063 -17.254   4.154  1.00 26.20      B    O
ATOM   2090  N   GLY   356      14.384 -15.031   3.963  1.00 25.89      B    N
ATOM   2091  CA  GLY   356      14.478 -15.090   2.520  1.00 27.05      B    C
ATOM   2092  C   GLY   356      13.145 -14.824   1.856  1.00 28.45      B    C
ATOM   2093  O   GLY   356      12.172 -14.473   2.509  1.00 28.91      B    O
ATOM   2094  N   ARG   357      13.103 -15.003   0.545  1.00 29.61      B    N
ATOM   2095  CA  ARG   357      11.921 -14.683  -0.235  1.00 30.42      B    C
ATOM   2096  CB  ARG   357      12.312 -14.507  -1.702  1.00 33.04      B    C
ATOM   2097  CG  ARG   357      12.919 -15.749  -2.307  1.00 38.74      B    C
ATOM   2098  CD  ARG   357      12.688 -15.791  -3.794  1.00 43.88      B    C
ATOM   2099  NE  ARG   357      13.524 -14.837  -4.515  1.00 49.58      B    N
ATOM   2100  CZ  ARG   357      14.766 -15.094  -4.921  1.00 52.78      B    C
ATOM   2101  NH1 ARG   357      15.456 -14.164  -5.580  1.00 53.88      B    N
ATOM   2102  NH2 ARG   357      15.322 -16.277  -4.662  1.00 53.07      B    N
ATOM   2103  C   ARG   357      10.802 -15.725  -0.121  1.00 29.64      B    C
ATOM   2104  O   ARG   357       9.708 -15.518  -0.635  1.00 28.09      B    O
ATOM   2105  N   CYS   358      11.064 -16.845   0.543  1.00 29.30      B    N
ATOM   2106  CA  CYS   358       9.998 -17.817   0.778  1.00 28.85      B    C
ATOM   2107  C   CYS   358       9.170 -17.473   2.017  1.00 27.26      B    C
ATOM   2108  O   CYS   358       8.119 -18.067   2.257  1.00 27.00      B    O
ATOM   2109  CB  CYS   358      10.570 -19.239   0.899  1.00 30.23      B    C
ATOM   2110  SG  CYS   358      10.992 -19.934  -0.727  1.00 33.15      B    S
ATOM   2111  N   VAL   359       9.635 -16.508   2.801  1.00 25.41      B    N
ATOM   2112  CA  VAL   359       8.846 -16.037   3.927  1.00 24.19      B    C
ATOM   2113  CB  VAL   359       9.747 -15.506   5.072  1.00 24.35      B    C
ATOM   2114  CG1 VAL   359       8.898 -14.934   6.197  1.00 22.54      B    C
ATOM   2115  CG2 VAL   359      10.602 -16.640   5.615  1.00 25.11      B    C
ATOM   2116  C   VAL   359       7.903 -14.941   3.461  1.00 23.48      B    C
ATOM   2117  O   VAL   359       8.282 -14.058   2.693  1.00 24.15      B    O
ATOM   2118  N   ASP   360       6.660 -15.017   3.914  1.00 22.77      B    N
ATOM   2119  CA  ASP   360       5.648 -14.067   3.504  1.00 20.61      B    C
ATOM   2120  CB  ASP   360       4.286 -14.766   3.445  1.00 23.47      B    C
ATOM   2121  CG  ASP   360       4.162 -15.711   2.237  1.00 26.57      B    C
ATOM   2122  OD1 ASP   360       3.832 -15.224   1.128  1.00 25.68      B    O
ATOM   2123  OD2 ASP   360       4.396 -16.935   2.395  1.00 27.94      B    O
ATOM   2124  C   ASP   360       5.632 -12.899   4.475  1.00 17.89      B    C
ATOM   2125  O   ASP   360       5.638 -11.740   4.069  1.00 16.84      B    O
ATOM   2126  N   LEU   361       5.639 -13.207   5.763  1.00 16.38      B    N
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ATOM   2127  CA  LEU   361       5.770 -12.171   6.777  1.00 16.17      B    C
ATOM   2128  CB  LEU   361       4.447 -11.425   6.946  1.00 17.23      B    C
ATOM   2129  CG  LEU   361       3.252 -12.186   7.523  1.00 16.84      B    C
ATOM   2130  CD1 LEU   361       2.087 -11.229   7.633  1.00 16.25      B    C
ATOM   2131  CD2 LEU   361       2.881 -13.374   6.643  1.00 18.27      B    C
ATOM   2132  C   LEU   361       6.225 -12.719   8.128  1.00 15.83      B    C
ATOM   2133  O   LEU   361       6.477 -13.913   8.278  1.00 16.68      B    O
ATOM   2134  N   PHE   362       6.345 -11.832   9.109  1.00 15.56      B    N
ATOM   2135  CA  PHE   362       6.792 -12.235  10.432  1.00 14.82      B    C
ATOM   2136  CB  PHE   362       8.059 -11.474  10.814  1.00 14.14      B    C
ATOM   2137  CG  PHE   362       9.259 -11.872  10.002  1.00 12.01      B    C
ATOM   2138  CD1 PHE   362      10.157 -12.818  10.486  1.00  9.24      B    C
ATOM   2139  CD2 PHE   362       9.464 -11.332   8.738  1.00  8.63      B    C
ATOM   2140  CE1 PHE   362      11.233 -13.218   9.726  1.00  8.18      B    C
ATOM   2141  CE2 PHE   362      10.534 -11.725   7.970  1.00  7.87      B    C
ATOM   2142  CZ  PHE   362      11.423 -12.671   8.463  1.00  9.03      B    C
ATOM   2143  C   PHE   362       5.710 -11.997  11.450  1.00 14.66      B    C
ATOM   2144  O   PHE   362       4.720 -11.336  11.158  1.00 17.08      B    O
ATOM   2145  N   ALA   363       5.891 -12.547  12.641  1.00 14.32      B    N
ATOM   2146  CA  ALA   363       4.877 -12.453  13.674  1.00 15.69      B    C
ATOM   2147  CB  ALA   363       3.767 -13.462  13.408  1.00 14.68      B    C
ATOM   2148  C   ALA   363       5.509 -12.717  15.025  1.00 17.04      B    C
ATOM   2149  O   ALA   363       6.544 -13.370  15.115  1.00 18.01      B    O
ATOM   2150  N   PRO   364       4.894 -12.207  16.101  1.00 18.24      B    N
ATOM   2151  CD  PRO   364       3.855 -11.163  16.138  1.00 17.59      B    C
ATOM   2152  CA  PRO   364       5.395 -12.521  17.438  1.00 18.94      B    C
ATOM   2153  CB  PRO   364       4.227 -12.146  18.339  1.00 18.02      B    C
ATOM   2154  CG  PRO   364       3.597 -10.978  17.621  1.00 17.86      B    C
ATOM   2155  C   PRO   364       5.753 -13.992  17.540  1.00 20.27      B    C
ATOM   2156  O   PRO   364       4.962 -14.851  17.152  1.00 22.37      B    O
ATOM   2157  N   GLY   365       6.950 -14.279  18.044  1.00 20.34      B    N
ATOM   2158  CA  GLY   365       7.380 -15.658  18.138  1.00 22.18      B    C
ATOM   2159  C   GLY   365       8.373 -15.948  19.243  1.00 23.70      B    C
ATOM   2160  O   GLY   365       8.973 -17.018  19.270  1.00 23.16      B    O
ATOM   2161  N   GLU   366       8.558 -15.002  20.154  1.00 25.89      B    N
ATOM   2162  CA  GLU   366       9.498 -15.193  21.252  1.00 29.11      B    C
ATOM   2163  CB  GLU   366      10.758 -14.359  21.023  1.00 31.40      B    C
ATOM   2164  CG  GLU   366      11.838 -14.585  22.053  1.00 35.84      B    C
ATOM   2165  CD  GLU   366      12.907 -13.508  22.017  1.00 40.32      B    C
ATOM   2166  OE1 GLU   366      13.931 -13.702  21.320  1.00 42.04      B    O
ATOM   2167  OE2 GLU   366      12.723 -12.462  22.685  1.00 43.30      B    O
ATOM   2168  C   GLU   366       8.856 -14.794  22.563  1.00 28.79      B    C
ATOM   2169  O   GLU   366       8.202 -13.753  22.642  1.00 28.23      B    O
ATOM   2170  N   ASP   367       9.048 -15.624  23.586  1.00 29.00      B    N
ATOM   2171  CA  ASP   367       8.400 -15.431  24.884  1.00 29.74      B    C
ATOM   2172  CB  ASP   367       8.868 -14.145  25.549  1.00 33.33      B    C
ATOM   2173  CG  ASP   367      10.172 -14.314  26.270  1.00 38.62      B    C
ATOM   2174  OD1 ASP   367      11.177 -13.708  25.839  1.00 42.20      B    O
ATOM   2175  OD2 ASP   367      10.195 -15.057  27.272  1.00 42.52      B    O
ATOM   2176  C   ASP   367       6.898 -15.371  24.771  1.00 28.66      B    C
ATOM   2177  O   ASP   367       6.273 -14.473  25.327  1.00 29.35      B    O
ATOM   2178  N   ILE   368       6.312 -16.316  24.047  1.00 28.05      B    N
ATOM   2179  CA  ILE   368       4.859 -16.347  23.911  1.00 26.36      B    C
ATOM   2180  CB  ILE   368       4.425 -16.924  22.542  1.00 24.44      B    C
ATOM   2181  CG2 ILE   368       2.921 -16.746  22.359  1.00 22.78      B    C
ATOM   2182  CG1 ILE   368       5.175 -16.208  21.414  1.00 23.14      B    C
ATOM   2183  CD1 ILE   368       4.953 -14.710  21.380  1.00 21.33      B    C
ATOM   2184  C   ILE   368       4.233 -17.175  25.028  1.00 25.21      B    C
ATOM   2185  O   ILE   368       4.365 -18.399  25.076  1.00 25.00      B    O
ATOM   2186  N   ILE   369       3.561 -16.491  25.940  1.00 23.47      B    N
ATOM   2187  CA  ILE   369       2.872 -17.179  27.007  1.00 24.06      B    C
ATOM   2188  CB  ILE   369       2.562 -16.226  28.161  1.00 24.47      B    C
ATOM   2189  CG2 ILE   369       2.407 -14.812  27.645  1.00 24.60      B    C
ATOM   2190  CG1 ILE   369       1.328 -16.723  28.901  1.00 24.42      B    C
ATOM   2191  CD1 ILE   369       0.614 -15.646  29.639  1.00 26.06      B    C
ATOM   2192  C   ILE   369       1.578 -17.780  26.496  1.00 23.71      B    C
ATOM   2193  O   ILE   369       0.827 -17.129  25.783  1.00 24.50      B    O
ATOM   2194  N   GLY   370       1.326 -19.029  26.866  1.00 24.27      B    N
ATOM   2195  CA  GLY   370       0.172 -19.743  26.357  1.00 24.97      B    C
ATOM   2196  C   GLY   370      -0.100 -20.957  27.214  1.00 26.60      B    C
ATOM   2197  O   GLY   370       0.565 -21.153  28.235  1.00 27.10      B    O
ATOM   2198  N   ALA   371      -1.063 -21.778  26.799  1.00 27.73      B    N
ATOM   2199  CA  ALA   371      -1.526 -22.902  27.615  1.00 27.34      B    C
ATOM   2200  CB  ALA   371      -2.705 -23.580  26.946  1.00 26.39      B    C
ATOM   2201  C   ALA   371      -0.431 -23.922  27.880  1.00 27.36      B    C
ATOM   2202  O   ALA   371       0.319 -24.296  26.980  1.00 28.65      B    O
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ATOM   2203  N   SER   372      -0.343 -24.371  29.126  1.00 27.77      B    N
ATOM   2204  CA  SER   372       0.621 -25.397  29.498  1.00 28.83      B    C
ATOM   2205  CB  SER   372       1.439 -24.952  30.706  1.00 29.82      B    C
ATOM   2206  OG  SER   372       2.034 -26.074  31.322  1.00 30.59      B    O
ATOM   2207  C   SER   372      -0.076 -26.700  29.829  1.00 29.05      B    C
ATOM   2208  O   SER   372      -0.969 -26.741  30.665  1.00 29.97      B    O
ATOM   2209  N   SER   373       0.349 -27.770  29.172  1.00 30.11      B    N
ATOM   2210  CA  SER   373      -0.304 -29.060  29.310  1.00 30.04      B    C
ATOM   2211  CB  SER   373       0.107 -29.979  28.159  1.00 30.84      B    C
ATOM   2212  OG  SER   373       1.493 -30.283  28.205  1.00 33.39      B    O
ATOM   2213  C   SER   373       0.062 -29.695  30.641  1.00 30.17      B    C
ATOM   2214  O   SER   373      -0.443 -30.761  30.986  1.00 29.58      B    O
ATOM   2215  N   ASP   374       0.942 -29.030  31.385  1.00 31.28      B    N
ATOM   2216  CA  ASP   374       1.373 -29.532  32.688  1.00 32.37      B    C
ATOM   2217  CB  ASP   374       2.410 -28.602  33.317  1.00 32.98      B    C
ATOM   2218  CG  ASP   374       3.832 -28.993  32.964  1.00 34.09      B    C
ATOM   2219  OD1 ASP   374       4.016 -29.822  32.042  1.00 35.12      B    O
ATOM   2220  OD2 ASP   374       4.763 -28.471  33.615  1.00 34.70      B    O
ATOM   2221  C   ASP   374       0.187 -29.639  33.616  1.00 31.98      B    C
ATOM   2222  O   ASP   374       0.079 -30.578  34.403  1.00 33.02      B    O
ATOM   2223  N   CYS   375      -0.696 -28.654  33.525  1.00 32.06      B    N
ATOM   2224  CA  CYS   375      -1.976 -28.705  34.204  1.00 31.88      B    C
ATOM   2225  C   CYS   375      -2.922 -27.755  33.477  1.00 30.87      B    C
ATOM   2226  O   CYS   375      -2.495 -26.986  32.618  1.00 28.42      B    O
ATOM   2227  CB  CYS   375      -1.809 -28.308  35.674  1.00 31.19      B    C
ATOM   2228  SG  CYS   375      -2.015 -26.538  36.040  1.00 37.01      B    S
ATOM   2229  N   SER   376      -4.207 -27.816  33.807  1.00 32.21      B    N
ATOM   2230  CA  SER   376      -5.221 -27.206  32.954  1.00 33.14      B    C
ATOM   2231  CB  SER   376      -6.529 -27.973  33.071  1.00 32.67      B    C
ATOM   2232  OG  SER   376      -6.680 -28.456  34.388  1.00 36.61      B    O
ATOM   2233  C   SER   376      -5.455 -25.734  33.237  1.00 32.73      B    C
ATOM   2234  O   SER   376      -6.133 -25.052  32.474  1.00 33.18      B    O
ATOM   2235  N   THR   377      -4.892 -25.245  34.335  1.00 33.07      B    N
ATOM   2236  CA  THR   377      -4.816 -23.808  34.571  1.00 32.43      B    C
ATOM   2237  CB  THR   377      -5.466 -23.429  35.916  1.00 32.44      B    C
ATOM   2238  OG1 THR   377      -4.997 -24.310  36.947  1.00 31.10      B    O
ATOM   2239  CG2 THR   377      -6.974 -23.510  35.801  1.00 31.10      B    C
ATOM   2240  C   THR   377      -3.366 -23.319  34.549  1.00 31.50      B    C
ATOM   2241  O   THR   377      -3.047 -22.242  35.061  1.00 30.92      B    O
ATOM   2242  N   CYS   378      -2.497 -24.116  33.936  1.00 29.98      B    N
ATOM   2243  CA  CYS   378      -1.081 -23.786  33.837  1.00 29.05      B    C
ATOM   2244  C   CYS   378      -0.729 -23.067  32.527  1.00 26.98      B    C
ATOM   2245  O   CYS   378      -1.265 -23.382  31.459  1.00 25.69      B    O
ATOM   2246  CB  CYS   378      -0.249 -25.064  33.989  1.00 29.82      B    C
ATOM   2247  SG  CYS   378      -0.190 -25.678  35.704  1.00 33.15      B    S
ATOM   2248  N   PHE   379       0.169 -22.090  32.627  1.00 24.89      B    N
ATOM   2249  CA  PHE   379       0.663 -21.372  31.463  1.00 23.14      B    C
ATOM   2250  CB  PHE   379       0.228 -19.909  31.530  1.00 21.19      B    C
ATOM   2251  CG  PHE   379      -1.233 -19.730  31.289  1.00 22.53      B    C
ATOM   2252  CD1 PHE   379      -2.151 -19.959  32.309  1.00 22.23      B    C
ATOM   2253  CD2 PHE   379      -1.709 -19.409  30.019  1.00 22.19      B    C
ATOM   2254  CE1 PHE   379      -3.520 -19.886  32.059  1.00 22.41      B    C
ATOM   2255  CE2 PHE   379      -3.072 -19.335  29.764  1.00 20.69      B    C
ATOM   2256  CZ  PHE   379      -3.978 -19.571  30.783  1.00 21.30      B    C
ATOM   2257  C   PHE   379       2.172 -21.483  31.357  1.00 23.01      B    C
ATOM   2258  O   PHE   379       2.837 -21.948  32.285  1.00 23.48      B    O
ATOM   2259  N   VAL   380       2.710 -21.073  30.215  1.00 21.60      B    N
ATOM   2260  CA  VAL   380       4.127 -21.259  29.953  1.00 21.47      B    C
ATOM   2261  CB  VAL   380       4.421 -22.730  29.624  1.00 20.54      B    C
ATOM   2262  CG1 VAL   380       3.910 -23.050  28.235  1.00 19.96      B    C
ATOM   2263  CG2 VAL   380       5.895 -23.015  29.760  1.00 19.12      B    C
ATOM   2264  C   VAL   380       4.526 -20.395  28.768  1.00 21.24      B    C
ATOM   2265  O   VAL   380       3.706 -20.143  27.891  1.00 21.49      B    O
ATOM   2266  N   SER   381       5.774 -19.937  28.737  1.00 21.07      B    N
ATOM   2267  CA  SER   381       6.242 -19.163  27.596  1.00 23.27      B    C
ATOM   2268  CB  SER   381       7.095 -17.992  28.073  1.00 24.23      B    C
ATOM   2269  OG  SER   381       7.575 -17.242  26.972  1.00 27.50      B    O
ATOM   2270  C   SER   381       7.038 -20.022  26.603  1.00 24.40      B    C
ATOM   2271  O   SER   381       7.786 -20.921  27.003  1.00 25.03      B    O
ATOM   2272  N   GLN   382       6.866 -19.759  25.310  1.00 22.98      B    N
ATOM   2273  CA  GLN   382       7.558 -20.537  24.294  1.00 24.19      B    C
ATOM   2274  CB  GLN   382       6.699 -21.731  23.851  1.00 25.69      B    C
ATOM   2275  CG  GLN   382       6.625 -22.896  24.858  1.00 28.37      B    C
ATOM   2276  CD  GLN   382       5.873 -24.131  24.310  1.00 31.99      B    C
ATOM   2277  OE1 GLN   382       5.701 -25.134  25.011  1.00 32.02      B    O
ATOM   2278  NE2 GLN   382       5.430 -24.054  23.055  1.00 33.34      B    N
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ATOM   2279  C   GLN   382       7.924 -19.672  23.090  1.00 24.25      B    C
ATOM   2280  O   GLN   382       7.331 -18.621  22.869  1.00 23.92      B    O
ATOM   2281  N   SER   383       8.918 -20.117  22.328  1.00 24.93      B    N
ATOM   2282  CA  SER   383       9.435 -19.366  21.186  1.00 25.23      B    C
ATOM   2283  CB  SER   383      10.741 -18.650  21.569  1.00 24.50      B    C
ATOM   2284  OG  SER   383      10.523 -17.648  22.550  1.00 21.80      B    O
ATOM   2285  C   SER   383       9.686 -20.306  20.003  1.00 25.02      B    C
ATOM   2286  O   SER   383       9.703 -21.521  20.165  1.00 26.23      B    O
ATOM   2287  N   GLY   384       9.892 -19.739  18.818  1.00 25.92      B    N
ATOM   2288  CA  GLY   384       9.975 -20.544  17.611  1.00 25.10      B    C
ATOM   2289  C   GLY   384       9.031 -20.032  16.534  1.00 25.74      B    C
ATOM   2290  O   GLY   384       8.130 -19.234  16.804  1.00 24.41      B    O
ATOM   2291  N   THR   385       9.240 -20.479  15.302  1.00 26.36      B    N
ATOM   2292  CA  THR   385       8.417 -20.030  14.185  1.00 26.63      B    C
ATOM   2293  CB  THR   385       9.056 -20.415  12.841  1.00 25.25      B    C
ATOM   2294  OG1 THR   385       9.504 -21.777  12.890  1.00 23.96      B    O
ATOM   2295  CG2 THR   385      10.221 -19.506  12.541  1.00 25.37      B    C
ATOM   2296  C   THR   385       7.003 -20.615  14.254  1.00 27.62      B    C
ATOM   2297  O   THR   385       6.094 -20.163  13.554  1.00 28.58      B    O
ATOM   2298  N   SER   386       6.820 -21.621  15.099  1.00 26.33      B    N
ATOM   2299  CA  SER   386       5.495 -22.160  15.316  1.00 26.38      B    C
ATOM   2300  CB  SER   386       5.572 -23.414  16.184  1.00 26.41      B    C
ATOM   2301  OG  SER   386       5.940 -24.523  15.395  1.00 27.85      B    O
ATOM   2302  C   SER   386       4.591 -21.125  15.978  1.00 26.58      B    C
ATOM   2303  O   SER   386       3.444 -20.948  15.572  1.00 27.11      B    O
ATOM   2304  N   GLN   387       5.104 -20.443  16.998  1.00 25.64      B    N
ATOM   2305  CA  GLN   387       4.283 -19.532  17.780  1.00 23.63      B    C
ATOM   2306  CB  GLN   387       5.064 -19.006  18.978  1.00 22.61      B    C
ATOM   2307  CG  GLN   387       6.153 -19.938  19.464  1.00 22.42      B    C
ATOM   2308  CD  GLN   387       5.615 -21.198  20.096  1.00 21.76      B    C
ATOM   2309  OE1 GLN   387       4.627 -21.162  20.839  1.00 21.92      B    O
ATOM   2310  NE2 GLN   387       6.263 -22.327  19.809  1.00 20.35      B    N
ATOM   2311  C   GLN   387       3.880 -18.378  16.886  1.00 23.78      B    C
ATOM   2312  O   GLN   387       2.777 -17.846  16.997  1.00 24.91      B    O
ATOM   2313  N   ALA   388       4.787 -18.002  15.992  1.00 23.75      B    N
ATOM   2314  CA  ALA   388       4.497 -17.002  14.972  1.00 23.70      B    C
ATOM   2315  CB  ALA   388       5.740 -16.768  14.094  1.00 23.02      B    C
ATOM   2316  C   ALA   388       3.319 -17.475  14.113  1.00 23.75      B    C
ATOM   2317  O   ALA   388       2.242 -16.873  14.129  1.00 24.11      B    O
ATOM   2318  N   ALA   389       3.529 -18.561  13.374  1.00 22.91      B    N
ATOM   2319  CA  ALA   389       2.503 -19.106  12.498  1.00 21.81      B    C
ATOM   2320  CB  ALA   389       2.887 -20.521  12.086  1.00 19.84      B    C
ATOM   2321  C   ALA   389       1.123 -19.094  13.172  1.00 22.14      B    C
ATOM   2322  O   ALA   389       0.135 -18.644  12.584  1.00 22.22      B    O
ATOM   2323  N   ALA   390       1.057 -19.570  14.410  1.00 22.17      B    N
ATOM   2324  CA  ALA   390      -0.215 -19.627  15.123  1.00 22.04      B    C
ATOM   2325  CB  ALA   390      -0.026 -20.241  16.506  1.00 22.25      B    C
ATOM   2326  C   ALA   390      -0.843 -18.241  15.249  1.00 21.51      B    C
ATOM   2327  O   ALA   390      -2.068 -18.099  15.179  1.00 21.52      B    O
ATOM   2328  N   HIS   391      -0.012 -17.219  15.443  1.00 20.10      B    N
ATOM   2329  CA  HIS   391      -0.526 -15.858  15.538  1.00 18.46      B    C
ATOM   2330  CB  HIS   391       0.615 -14.857  15.771  1.00 19.36      B    C
ATOM   2331  CG  HIS   391       0.912 -14.586  17.214  1.00 20.07      B    C
ATOM   2332  CD2 HIS   391       0.636 -13.513  17.995  1.00 19.81      B    C
ATOM   2333  ND1 HIS   391       1.615 -15.467  18.010  1.00 18.44      B    N
ATOM   2334  CE1 HIS   391       1.761 -14.947  19.216  1.00 18.95      B    C
ATOM   2335  NE2 HIS   391       1.177 -13.762  19.234  1.00 18.77      B    N
ATOM   2336  C   HIS   391      -1.241 -15.527  14.234  1.00 16.67      B    C
ATOM   2337  O   HIS   391      -2.274 -14.852  14.222  1.00 15.39      B    O
ATOM   2338  N   VAL   392      -0.688 -16.027  13.136  1.00 15.23      B    N
ATOM   2339  CA  VAL   392      -1.146 -15.632  11.815  1.00 14.91      B    C
ATOM   2340  CB  VAL   392       0.007 -15.768  10.783  1.00 14.04      B    C
ATOM   2341  CG1 VAL   392      -0.475 -15.429   9.382  1.00 12.46      B    C
ATOM   2342  CG2 VAL   392       1.143 -14.838  11.169  1.00 12.88      B    C
ATOM   2343  C   VAL   392      -2.369 -16.446  11.385  1.00 15.09      B    C
ATOM   2344  O   VAL   392      -3.269 -15.929  10.722  1.00 14.21      B    O
ATOM   2345  N   ALA   393      -2.421 -17.708  11.789  1.00 15.37      B    N
ATOM   2346  CA  ALA   393      -3.658 -18.467  11.655  1.00 17.74      B    C
ATOM   2347  CB  ALA   393      -3.453 -19.888  12.163  1.00 18.52      B    C
ATOM   2348  C   ALA   393      -4.791 -17.776  12.434  1.00 17.78      B    C
ATOM   2349  O   ALA   393      -5.936 -17.716  11.980  1.00 16.51      B    O
ATON   2350  N   GLY   394      -4.453 -17.248  13.606  1.00 18.67      B    N
ATOM   2351  CA  GLY   394      -5.397 -16.444  14.359  1.00 19.56      B    C
ATOM   2352  C   GLY   394      -5.878 -15.212  13.613  1.00 20.36      B    C
ATOM   2353  O   GLY   394      -7.082 -14.986  13.501  1.00 21.22      B    O
ATOM   2354  N   ILE   395      -4.950 -14.414  13.096  1.00 20.24      B    N
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ATOM   2355  CA  ILE   395      -5.312 -13.195  12.384  1.00 20.11      B    C
ATOM   2356  CB  ILE   395      -4.060 -12.375  12.034  1.00 20.04      B    C
ATOM   2357  CG2 ILE   395      -4.449 -11.094  11.302  1.00 19.78      B    C
ATOM   2358  CG1 ILE   395      -3.301 -12.049  13.316  1.00 20.30      B    C
ATOM   2359  CD1 ILE   395      -2.049 -11.279  13.095  1.00 19.69      B    C
ATOM   2360  C   ILE   395      -6.077 -13.519  11.104  1.00 21.08      B    C
ATOM   2361  O   ILE   395      -6.974 -12.776  10.691  1.00 21.99      B    O
ATOM   2362  N   ALA   396      -5.732 -14.634  10.473  1.00 20.99      B    N
ATOM   2363  CA  ALA   396      -6.436 -15.039   9.267  1.00 20.56      B    C
ATOM   2364  CB  ALA   396      -5.770 -16.267   8.659  1.00 20.18      B    C
ATOM   2365  C   ALA   396      -7.885 -15.338   9.631  1.00 19.85      B    C
ATOM   2366  O   ALA   396      -8.809 -14.845   8.995  1.00 17.95      B    O
ATOM   2367  N   ALA   397      -8.071 -16.136  10.677  1.00 21.02      B    N
ATOM   2368  CA  ALA   397      -9.402 -16.485  11.154  1.00 21.16      B    C
ATOM   2369  CB  ALA   397      -9.305 -17.247  12.464  1.00 17.93      B    C
ATOM   2370  C   ALA   397     -10.244 -15.233  11.342  1.00 22.61      B    C
ATOM   2371  O   ALA   397     -11.378 -15.168  10.875  1.00 25.02      B    O
ATOM   2372  N   MET   398      -9.686 -14.231  12.014  1.00 23.67      B    N
ATOM   2373  CA  MET   398     -10.426 -13.008  12.282  1.00 23.20      B    C
ATOM   2374  CB  MET   398      -9.601 -12.084  13.167  1.00 24.40      B    C
ATOM   2375  CG  MET   398      -9.150 -12.733  14.457  1.00 29.13      B    C
ATOM   2376  SD  MET   398     -10.147 -12.270  15.879  1.00 35.63      B    S
ATOM   2377  CE  MET   398      -9.367 -10.694  16.357  1.00 31.39      B    C
ATOM   2378  C   MET   398     -10.784 -12.298  10.980  1.00 23.27      B    C
ATOM   2379  O   MET   398     -11.925 -11.889  10.782  1.00 22.16      B    O
ATOM   2380  N   MET   399      -9.815 -12.165  10.083  1.00 22.78      B    N
ATOM   2381  CA  MET   399     -10.059 -11.448   8.843  1.00 22.76      B    C
ATOM   2382  CB  MET   399      -8.741 -11.202   8.118  1.00 24.23      B    C
ATOM   2383  CG  MET   399      -7.755 -10.386   8.928  1.00 27.83      B    C
ATOM   2384  SD  MET   399      -6.151 -10.150   8.115  1.00 32.96      B    S
ATOM   2385  CE  MET   399      -6.680  -9.723   6.497  1.00 29.89      B    C
ATOM   2386  C   MET   399     -11.032 -12.195   7.930  1.00 22.15      B    C
ATOM   2387  O   MET   399     -11.828 -11.580   7.218  1.00 21.59      B    O
ATOM   2388  N   LEU   400     -10.975 -13.522   7.957  1.00 21.52      B    N
ATOM   2389  CA  LEU   400     -11.878 -14.320   7.140  1.00 20.75      B    C
ATOM   2390  CB  LEU   400     -11.349 -15.745   6.962  1.00 18.56      B    C
ATOM   2391  CG  LEU   400     -10.109 -15.930   6.085  1.00 16.86      B    C
ATOM   2392  CD1 LEU   400      -9.897 -17.411   5.826  1.00 13.64      B    C
ATOM   2393  CD2 LEU   400     -10.273 -15.166   4.770  1.00 15.30      B    C
ATOM   2394  C   LEU   400     -13.248 -14.379   7.782  1.00 22.24      B    C
ATOM   2395  O   LEU   400     -14.267 -14.449   7.092  1.00 23.47      B    O
ATOM   2396  N   SER   401     -13.284 -14.352   9.108  1.00 22.69      B    N
ATOM   2397  CA  SER   401     -14.566 -14.401   9.786  1.00 23.81      B    C
ATOM   2398  CB  SER   401     -14.375 -14.687  11.269  1.00 25.01      B    C
ATOM   2399  OG  SER   401     -15.532 -15.304  11.804  1.00 25.44      B    O
ATOM   2400  C   SER   401     -15.288 -13.080   9.596  1.00 23.85      B    C
ATOM   2401  O   SER   401     -16.508 -13.006   9.696  1.00 23.69      B    O
ATOM   2402  N   ALA   402     -14.523 -12.035   9.310  1.00 25.13      B    N
ATOM   2403  CA  ALA   402     -15.106 -10.745   9.016  1.00 25.64      B    C
ATOM   2404  CB  ALA   402     -14.124  -9.663   9.291  1.00 23.94      B    C
ATOM   2405  C   ALA   402     -15.531 -10.718   7.560  1.00 28.07      B    C
ATOM   2406  O   ALA   402     -16.724 -10.730   7.279  1.00 31.96      B    O
ATOM   2407  N   GLU   403     -14.576 -10.696   6.631  1.00 28.94      B    N
ATOM   2408  CA  GLU   403     -14.920 -10.756   5.204  1.00 29.12      B    C
ATOM   2409  CB  GLU   403     -14.104  -9.769   4.382  1.00 29.99      B    C
ATOM   2410  CG  GLU   403     -13.762  -8.509   5.092  1.00 33.22      B    C
ATOM   2411  CD  GLU   403     -12.300  -8.220   4.979  1.00 36.14      B    C
ATOM   2412  OE1 GLU   403     -11.906  -7.640   3.941  1.00 37.63      B    O
ATOM   2413  OE2 GLU   403     -11.547  -8.584   5.918  1.00 38.88      B    O
ATOM   2414  C   GLU   403     -14.652 -12.140   4.657  1.00 27.95      B    C
ATOM   2415  O   GLU   403     -13.554 -12.428   4.180  1.00 26.83      B    O
ATOM   2416  N   PRO   404     -15.661 -13.015   4.719  1.00 26.86      B    N
ATOM   2417  CD  PRO   404     -16.921 -12.782   5.442  1.00 25.89      B    C
ATOM   2418  CA  PRO   404     -15.499 -14.423   4.362  1.00 25.99      B    C
ATOM   2419  CB  PRO   404     -16.769 -15.073   4.911  1.00 25.93      B    C
ATOM   2420  CG  PRO   404     -17.237 -14.135   5.983  1.00 25.26      B    C
ATOM   2421  C   PRO   404     -15.296 -14.682   2.868  1.00 25.55      B    C
ATOM   2422  O   PRO   404     -14.748 -15.718   2.479  1.00 26.48      B    O
ATOM   2423  N   GLU   405     -15.727 -13.747   2.029  1.00 25.09      B    N
ATOM   2424  CA  GLU   405     -15.601 -13.931   0.588  1.00 25.06      B    C
ATOM   2425  CB  GLU   405     -16.583 -13.020  -0.153  1.00 27.09      B    C
ATOM   2426  CG  GLU   405     -18.044 -13.438  -0.031  1.00 29.66      B    C
ATOM   2427  CD  GLU   405     -19.001 -12.496  -0.752  1.00 30.19      B    C
ATOM   2428  OE1 GLU   405     -20.212 -12.786  -0.767  1.00 31.61      B    O
ATOM   2429  OE2 GLU   405     -18.553 -11.471  -1.303  1.00 30.56      B    O
ATOM   2430  C   GLU   405     -14.188 -13.693   0.056  1.00 24.86      B    C
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ATOM   2431  O   GLU   405     -13.948 -13.872  -1.132  1.00 24.99      B    O
ATOM   2432  N   LEU   406     -13.256 -13.295   0.922  1.00 24.30      B    N
ATOM   2433  CA  LEU   406     -11.870 -13.043   0.505  1.00 23.76      B    C
ATOM   2434  CB  LEU   406     -11.000 -12.639   1.701  1.00 21.49      B    C
ATOM   2435  CG  LEU   406     -11.111 -11.210   2.222  1.00 20.80      B    C
ATOM   2436  CD1 LEU   406     -10.269 -11.069   3.464  1.00 18.92      B    C
ATOM   2437  CD2 LEU   406     -10.664 -10.233   1.156  1.00 18.73      B    C
ATOM   2438  C   LEU   406     -11.234 -14.263  -0.146  1.00 23.84      B    C
ATOM   2439  O   LEU   406     -11.275 -15.358   0.411  1.00 25.23      B    O
ATOM   2440  N   THR   407     -10.633 -14.067  -1.315  1.00 23.77      B    N
ATOM   2441  CA  THR   407      -9.781 -15.087  -1.918  1.00 23.47      B    C
ATOM   2442  CB  THR   407      -9.533 -14.794  -3.395  1.00 21.81      B    C
ATOM   2443  OG1 THR   407      -8.682 -13.647  -3.517  1.00 23.22      B    O
ATOM   2444  CG2 THR   407     -10.827 -14.507  -4.089  1.00 19.79      B    C
ATOM   2445  C   THR   407      -8.419 -15.138  -1.213  1.00 24.96      B    C
ATOM   2446  O   THR   407      -8.081 -14.268  -0.399  1.00 26.81      B    O
ATOM   2447  N   LEU   408      -7.630 -16.154  -1.535  1.00 24.30      B    N
ATOM   2448  CA  LEU   408      -6.312 -16.292  -0.929  1.00 22.60      B    C
ATOM   2449  CB  LEU   408      -5.678 -17.616  -1.355  1.00 22.93      B    C
ATOM   2450  CG  LEU   408      -4.472 -18.043  -0.525  1.00 24.47      B    C
ATOM   2451  CD1 LEU   408      -4.734 -17.740   0.940  1.00 23.99      B    C
ATOM   2452  CD2 LEU   408      -4.211 -19.529  -0.732  1.00 25.90      B    C
ATOM   2453  C   LEU   408      -5.421 -15.131  -1.344  1.00 20.03      B    C
ATOM   2454  O   LEU   408      -4.552 -14.697  -0.592  1.00 16.95      B    O
ATOM   2455  N   ALA   409      -5.651 -14.636  -2.553  1.00 19.32      B    N
ATOM   2456  CA  ALA   409      -4.906 -13.506  -3.065  1.00 19.43      B    C
ATOM   2457  CB  ALA   409      -5.280 -13.249  -4.499  1.00 20.13      B    C
ATOM   2458  C   ALA   409      -5.248 -12.301  -2.220  1.00 20.61      B    C
ATOM   2459  O   ALA   409      -4.368 -11.579  -1.750  1.00 20.75      B    O
ATOM   2460  N   GLU   410      -6.540 -12.092  -2.012  1.00 21.62      B    N
ATOM   2461  CA  GLU   410      -6.976 -10.967  -1.212  1.00 22.93      B    C
ATOM   2462  CB  GLU   410      -8.480 -10.800  -1.324  1.00 25.38      B    C
ATOM   2463  CG  GLU   410      -8.903 -10.285  -2.661  1.00 30.96      B    C
ATOM   2464  CD  GLU   410     -10.208 -10.888  -3.125  1.00 34.21      B    C
ATOM   2465  OE1 GLU   410     -10.441 -10.877  -4.355  1.00 37.17      B    O
ATOM   2466  OE2 GLU   410     -10.993 -11.371  -2.269  1.00 35.26      B    O
ATOM   2467  C   GLU   410      -6.583 -11.119   0.247  1.00 22.94      B    C
ATOM   2468  O   GLU   410      -6.332 -10.128   0.925  1.00 23.23      B    O
ATOM   2469  N   LEU   411      -6.532 -12.352   0.738  1.00 22.70      B    N
ATOM   2470  CA  LEU   411      -6.175 -12.552   2.129  1.00 22.90      B    C
ATOM   2471  CB  LEU   411      -6.387 -13.998   2.542  1.00 20.63      B    C
ATOM   2472  CG  LEU   411      -5.995 -14.204   4.009  1.00 20.39      B    C
ATOM   2473  CD1 LEU   411      -6.881 -13.338   4.906  1.00 17.47      B    C
ATOM   2474  CD2 LEU   411      -6.123 -15.670   4.375  1.00 18.76      B    C
ATOM   2475  C   LEU   411      -4.722 -12.174   2.373  1.00 24.89      B    C
ATOM   2476  O   LEU   411      -4.369 -11.657   3.438  1.00 24.07      B    O
ATOM   2477  N   ARG   412      -3.877 -12.438   1.383  1.00 27.02      B    N
ATOM   2478  CA  ARG   412      -2.471 -12.099   1.496  1.00 29.77      B    C
ATOM   2479  CB  ARG   412      -1.683 -12.716   0.354  1.00 30.56      B    C
ATOM   2480  CG  ARG   412      -1.384 -14.172   0.527  1.00 32.41      B    C
ATOM   2481  CD  ARG   412      -0.517 -14.632  -0.620  1.00 36.01      B    C
ATOM   2482  NE  ARG   412       0.598 -15.444  -0.152  1.00 38.01      B    N
ATOM   2483  CZ  ARG   412       0.587 -16.768  -0.136  1.00 38.92      B    C
ATOM   2484  NH1 ARG   412       1.643 -17.437   0.308  1.00 38.83      B    N
ATOM   2485  NH2 ARG   412      -0.485 -17.418  -0.569  1.00 38.86      B    N
ATOM   2486  C   ARG   412      -2.327 -10.599   1.436  1.00 30.73      B    C
ATOM   2487  O   ARG   412      -1.628  -9.994   2.248  1.00 30.38      B    O
ATOM   2488  N   GLN   413      -3.004 -10.005   0.461  1.00 33.11      B    N
ATOM   2489  CA  GLN   413      -2.895  -8.581   0.221  1.00 35.39      B    C
ATOM   2490  CB  GLN   413      -3.779  -8.176  -0.948  1.00 38.60      B    C
ATOM   2491  CG  GLN   413      -3.344  -6.875  -1.596  1.00 45.86      B    C
ATOM   2492  CD  GLN   413      -1.860  -6.872  -1.965  1.00 49.77      B    C
ATOM   2493  OE1 GLN   413      -1.485  -7.150  -3.115  1.00 52.54      B    O
ATOM   2494  NE2 GLN   413      -1.008  -6.552  -0.989  1.00 49.77      B    N
ATOM   2495  C   GLN   413      -3.301  -7.805   1.456  1.00 35.24      B    C
ATOM   2496  O   GLN   413      -2.824  -6.696   1.682  1.00 36.49      B    O
ATOM   2497  N   ARG   414      -4.175  -8.405   2.256  1.00 35.12      B    N
ATOM   2498  CA  ARG   414      -4.643  -7.806   3.500  1.00 34.96      B    C
ATOM   2499  CB  ARG   414      -5.975  -8.422   3.901  1.00 36.59      B    C
ATOM   2500  CG  ARG   414      -7.128  -7.989   3.043  1.00 39.95      B    C
ATOM   2501  CD  ARG   414      -8.229  -7.397   3.892  1.00 42.16      B    C
ATOM   2502  NE  ARG   414      -9.264  -6.704   3.125  1.00 44.38      B    N
ATOM   2503  CZ  ARG   414      -9.560  -6.929   1.846  1.00 46.36      B    C
ATOM   2504  NH1 ARG   414      -8.904  -7.835   1.136  1.00 48.71      B    N
ATOM   2505  NH2 ARG   414     -10.541  -6.251   1.274  1.00 47.81      B    N
ATOM   2506  C   ARG   414      -3.657  -7.972   4.646  1.00 34.00      B    C
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ATOM   2507  O   ARG   414      -3.252  -6.992   5.270  1.00 34.78      B    O
ATOM   2508  N   LEU   415      -3.278  -9.211   4.931  1.00 32.40      B    N
ATOM   2509  CA  LEU   415      -2.233  -9.466   5.912  1.00 31.47      B    C
ATOM   2510  CB  LEU   415      -1.689 -10.873   5.748  1.00 31.21      B    C
ATOM   2511  CG  LEU   415      -2.574 -11.951   6.346  1.00 31.92      B    C
ATOM   2512  CD1 LEU   415      -2.230 -13.274   5.697  1.00 33.02      B    C
ATOM   2513  CD2 LEU   415      -2.395 -11.990   7.862  1.00 30.21      B    C
ATOM   2514  C   LEU   415      -1.091  -8.479   5.750  1.00 31.04      B    C
ATOM   2515  O   LEU   415      -0.679  -7.823   6.711  1.00 31.86      B    O
ATOM   2516  N   ILE   416      -0.580  -8.380   4.530  1.00 29.96      B    N
ATOM   2517  CA  ILE   416       0.423  -7.378   4.230  1.00 30.82      B    C
ATOM   2518  CB  ILE   416       0.655  -7.241   2.716  1.00 30.83      B    C
ATOM   2519  CG2 ILE   416       1.444  -5.977   2.434  1.00 29.81      B    C
ATOM   2520  CG1 ILE   416       1.374  -8.480   2.178  1.00 29.19      B    C
ATOM   2521  CD1 ILE   416       1.488  -8.503   0.678  1.00 25.78      B    C
ATOM   2522  C   ILE   416      -0.046  -6.031   4.743  1.00 30.89      B    C
ATOM   2523  O   ILE   416       0.545  -5.459   5.663  1.00 31.33      B    O
ATOM   2524  N   HIS   417      -1.130  -5.548   4.145  1.00 31.24      B    N
ATOM   2525  CA  HIS   417      -1.556  -4.166   4.300  1.00 30.14      B    C
ATOM   2526  CB  HIS   417      -2.812  -3.907   3.469  1.00 30.66      B    C
ATOM   2527  CG  HIS   417      -3.393  -2.548   3.679  1.00 32.44      B    C
ATOM   2528  CD2 HIS   417      -2.908  -1.318   3.388  1.00 33.19      B    C
ATOM   2529  ND1 HIS   417      -4.597  -2.345   4.319  1.00 31.59      B    N
ATOM   2530  CE1 HIS   417      -4.828  -1.048   4.417  1.00 32.26      B    C
ATOM   2531  NE2 HIS   417      -3.818  -0.403   3.860  1.00 33.69      B    N
ATOM   2532  C   HIS   417      -1.811  -3.789   5.750  1.00 29.15      B    C
ATOM   2533  O   HIS   417      -1.646  -2.629   6.122  1.00 29.16      B    O
ATOM   2534  N   PHE   418      -2.210  -4.761   6.568  1.00 27.70      B    N
ATOM   2535  CA  PHE   418      -2.394  -4.512   7.992  1.00 27.83      B    C
ATOM   2536  CB  PHE   418      -3.595  -5.285   8.534  1.00 28.70      B    C
ATOM   2537  CG  PHE   418      -4.895  -4.754   8.058  1.00 29.85      B    C
ATOM   2538  CD1 PHE   418      -5.677  -5.485   7.185  1.00 29.88      B    C
ATOM   2539  CD2 PHE   418      -5.285  -3.473   8.393  1.00 30.40      B    C
ATOM   2540  CE1 PHE   418      -6.822  -4.945   6.651  1.00 29.59      B    C
ATOM   2541  CE2 PHE   418      -6.426  -2.929   7.863  1.00 31.18      B    C
ATOM   2542  CZ  PHE   418      -7.195  -3.661   6.986  1.00 30.31      B    C
ATOM   2543  C   PHE   418      -1.164  -4.884   8.777  1.00 27.12      B    C
ATOM   2544  O   PHE   418      -1.177  -4.895  10.005  1.00 26.90      B    O
ATOM   2545  N   SER   419      -0.094  -5.201   8.070  1.00 26.74      B    N
ATOM   2546  CA  SER   419       1.154  -5.463   8.748  1.00 26.69      B    C
ATOM   2547  CB  SER   419       2.006  -6.431   7.933  1.00 25.86      B    C
ATOM   2548  OG  SER   419       1.593  -7.759   8.188  1.00 25.35      B    O
ATOM   2549  C   SER   419       1.905  -4.165   8.983  1.00 26.68      B    C
ATOM   2550  O   SER   419       1.879  -3.262   8.144  1.00 26.77      B    O
ATOM   2551  N   ALA   420       2.544  -4.079  10.147  1.00 25.25      B    N
ATOM   2552  CA  ALA   420       3.554  -3.072  10.412  1.00 24.13      B    C
ATOM   2553  CB  ALA   420       4.069  -3.215  11.816  1.00 24.79      B    C
ATOM   2554  C   ALA   420       4.675  -3.321   9.439  1.00 24.87      B    C
ATOM   2555  O   ALA   420       5.089  -4.466   9.238  1.00 26.34      B    O
ATOM   2556  N   LYS   421       5.172  -2.252   8.838  1.00 24.32      B    N
ATOM   2557  CA  LYS   421       6.132  -2.383   7.760  1.00 25.67      B    C
ATOM   2558  CB  LYS   421       5.557  -1.747   6.497  1.00 23.67      B    C
ATOM   2559  CG  LYS   421       4.124  -2.161   6.249  1.00 23.87      B    C
ATOM   2560  CD  LYS   421       3.716  -2.007   4.797  1.00 23.84      B    C
ATOM   2561  CE  LYS   421       2.331  -2.614   4.550  1.00 23.52      B    C
ATOM   2562  NZ  LYS   421       1.363  -2.280   5.638  1.00 22.85      B    N
ATOM   2563  C   LYS   421       7.468  -1.743   8.125  1.00 27.41      B    C
ATOM   2564  O   LYS   421       7.510  -0.712   8.798  1.00 28.11      B    O
ATOM   2565  N   ASP   422       8.562  -2.361   7.691  1.00 28.06      B    N
ATOM   2566  CA  ASP   422       9.873  -1.745   7.844  1.00 27.60      B    C
ATOM   2567  CB  ASP   422       9.974  -0.503   6.955  1.00 26.92      B    C
ATOM   2568  CG  ASP   422      10.080  -0.856   5.489  1.00 28.56      B    C
ATOM   2569  OD1 ASP   422      10.866  -1.768   5.161  1.00 28.83      B    O
ATOM   2570  OD2 ASP   422       9.381  -0.234   4.663  1.00 29.17      B    O
ATOM   2571  C   ASP   422      10.124  -1.368   9.296  1.00 26.84      B    C
ATOM   2572  O   ASP   422      10.463  -0.227   9.607  1.00 26.44      B    O
ATOM   2573  N   VAL   423       9.944  -2.335  10.182  1.00 25.89      B    N
ATOM   2574  CA  VAL   423      10.146  -2.100  11.599  1.00 26.20      B    C
ATOM   2575  CB  VAL   423       8.831  -2.292  12.396  1.00 27.67      B    C
ATOM   2576  CG1 VAL   423       7.775  -1.320  11.900  1.00 27.74      B    C
ATOM   2577  CG2 VAL   423       8.331  -3.723  12.240  1.00 28.31      B    C
ATOM   2578  C   VAL   423      11.158  -3.110  12.075  1.00 25.50      B    C
ATOM   2579  O   VAL   423      11.697  -3.006  13.168  1.00 25.97      B    O
ATOM   2580  N   ILE   424      11.415  -4.101  11.239  1.00 25.87      B    N
ATOM   2581  CA  ILE   424      12.307  -5.171  11.630  1.00 26.65      B    C
ATOM   2582  CB  ILE   424      11.960  -6.471  10.893  1.00 26.26      B    C
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ATOM   2583  CG2 ILE   424      12.495  -7.652  11.674  1.00 27.62      B    C
ATOM   2584  CG1 ILE   424      10.446  -6.635  10.784  1.00 27.06      B    C
ATOM   2585  CD1 ILE   424      10.016  -7.957  10.169  1.00 26.12      B    C
ATOM   2586  C   ILE   424      13.759  -4.800  11.329  1.00 27.01      B    C
ATOM   2587  O   ILE   424      14.072  -4.233  10.274  1.00 26.17      B    O
ATOM   2588  N   ASN   425      14.642  -5.128  12.268  1.00 28.05      B    N
ATOM   2589  CA  ASN   425      16.065  -4.869  12.107  1.00 29.38      B    C
ATOM   2590  CB  ASN   425      16.741  -4.831  13.475  1.00 31.69      B    C
ATOM   2591  CG  ASN   425      18.215  -4.485  13.385  1.00 34.14      B    C
ATOM   2592  OD1 ASN   425      18.782  -4.397  12.292  1.00 35.11      B    O
ATOM   2593  ND2 ASN   425      18.846  -4.287  14.538  1.00 34.72      B    N
ATOM   2594  C   ASN   425      16.729  -5.933  11.241  1.00 28.62      B    C
ATOM   2595  O   ASN   425      16.973  -7.045  11.697  1.00 29.23      B    O
ATOM   2596  N   GLU   426      17.038  -5.576  10.001  1.00 28.49      B    N
ATOM   2597  CA  GLU   426      17.513  -6.536   9.015  1.00 29.63      B    C
ATOM   2598  CB  GLU   426      17.266  -5.985   7.624  1.00 31.63      B    C
ATOM   2599  CG  GLU   426      15.815  -5.841   7.266  1.00 35.09      B    C
ATOM   2600  CD  GLU   426      15.653  -5.209   5.905  1.00 38.74      B    C
ATOM   2601  OE1 GLU   426      14.584  -5.376   5.271  1.00 41.88      B    O
ATOM   2602  OE2 GLU   426      16.615  -4.541   5.466  1.00 40.95      B    O
ATOM   2603  C   GLU   426      18.991  -6.913   9.148  1.00 29.25      B    C
ATOM   2604  O   GLU   426      19.488  -7.779   8.432  1.00 28.10      B    O
ATOM   2605  N   ALA   427      19.688  -6.258  10.065  1.00 30.10      B    N
ATOM   2606  CA  ALA   427      21.111  -6.486  10.263  1.00 29.38      B    C
ATOM   2607  CB  ALA   427      21.607  -5.637  11.417  1.00 28.99      B    C
ATOM   2608  C   ALA   427      21.426  -7.947  10.525  1.00 29.94      B    C
ATOM   2609  O   ALA   427      22.500  -8.422  10.165  1.00 29.35      B    O
ATOM   2610  N   TRP   428      20.497  -8.661  11.153  1.00 31.00      B    N
ATOM   2611  CA  TRP   428      20.745 -10.045  11.540  1.00 31.86      B    C
ATOM   2612  CB  TRP   428      19.724 -10.484  12.597  1.00 34.20      B    C
ATOM   2613  CG  TRP   428      20.016 -11.842  13.223  1.00 37.61      B    C
ATOM   2614  CD2 TRP   428      19.340 -13.084  12.952  1.00 39.01      B    C
ATOM   2615  CE2 TRP   428      19.939 -14.073  13.767  1.00 40.16      B    C
ATOM   2616  CE3 TRP   428      18.287 -13.452  12.106  1.00 38.02      B    C
ATOM   2617  CD1 TRP   428      20.973 -12.129  14.161  1.00 38.36      B    C
ATOM   2618  NE1 TRP   428      20.932 -13.467  14.491  1.00 38.65      B    N
ATOM   2619  CZ2 TRP   428      19.521 -15.409  13.750  1.00 40.19      B    C
ATOM   2620  CZ3 TRP   428      17.875 -14.776  12.092  1.00 38.79      B    C
ATOM   2621  CH2 TRP   428      18.487 -15.737  12.911  1.00 39.60      B    C
ATOM   2622  C   TRP   428      20.731 -11.020  10.353  1.00 31.48      B    C
ATOM   2623  O   TRP   428      21.473 -12.003  10.346  1.00 31.38      B    O
ATOM   2624  N   PHE   429      19.898 -10.763   9.348  1.00 31.09      B    N
ATOM   2625  CA  PHE   429      19.884 -11.621   8.167  1.00 31.73      B    C
ATOM   2626  CB  PHE   429      18.752 -11.254   7.220  1.00 31.93      B    C
ATOM   2627  CG  PHE   429      17.416 -11.186   7.876  1.00 33.61      B    C
ATOM   2628  CD1 PHE   429      16.565 -10.120   7.621  1.00 32.81      B    C
ATOM   2629  CD2 PHE   429      17.011 -12.182   8.753  1.00 31.99      B    C
ATOM   2630  CE1 PHE   429      15.341 -10.047   8.233  1.00 33.79      B    C
ATOM   2631  CE2 PHE   429      15.789 -12.116   9.367  1.00 32.86      B    C
ATOM   2632  CZ  PHE   429      14.946 -11.046   9.108  1.00 33.20      B    C
ATOM   2633  C   PHE   429      21.179 -11.428   7.421  1.00 33.05      B    C
ATOM   2634  O   PHE   429      21.792 -10.366   7.504  1.00 34.48      B    O
ATOM   2635  N   PRO   430      21.610 -12.444   6.662  1.00 33.68      B    N
ATOM   2636  CD  PRO   430      21.130 -13.829   6.543  1.00 34.28      B    C
ATOM   2637  CA  PRO   430      22.700 -12.155   5.736  1.00 34.21      B    C
ATOM   2638  CB  PRO   430      22.977 -13.501   5.066  1.00 33.97      B    C
ATOM   2639  CG  PRO   430      21.737 -14.282   5.249  1.00 34.13      B    C
ATOM   2640  C   PRO   430      22.294 -11.058   4.750  1.00 35.03      B    C
ATOM   2641  O   PRO   430      21.112 -10.832   4.497  1.00 35.24      B    O
ATOM   2642  N   GLU   431      23.293 -10.368   4.214  1.00 36.46      B    N
ATOM   2643  CA  GLU   431      23.079  -9.141   3.475  1.00 36.94      B    C
ATOM   2644  CB  GLU   431      24.409  -8.645   2.928  1.00 38.04      B    C
ATOM   2645  CG  GLU   431      25.515  -8.637   3.950  1.00 39.87      B    C
ATOM   2646  CD  GLU   431      26.828  -8.187   3.358  1.00 42.43      B    C
ATOM   2647  OE1 GLU   431      26.842  -7.845   2.152  1.00 42.43      B    O
ATOM   2648  OE2 GLU   431      27.842  -8.171   4.098  1.00 43.52      B    O
ATOM   2649  C   GLU   431      22.125  -9.374   2.328  1.00 37.62      B    C
ATOM   2650  O   GLU   431      21.094  -8.710   2.205  1.00 38.50      B    O
ATOM   2651  N   ASP   432      22.478 -10.327   1.482  1.00 37.53      B    N
ATOM   2652  CA  ASP   432      21.711 -10.562   0.280  1.00 37.71      B    C
ATOM   2653  CB  ASP   432      22.396 -11.627  -0.560  1.00 41.08      B    C
ATOM   2654  CG  ASP   432      23.813 -11.258  -0.898  1.00 43.17      B    C
ATOM   2655  OD1 ASP   432      24.061 -10.058  -1.146  1.00 45.66      B    O
ATOM   2656  OD2 ASP   432      24.675 -12.159  -0.909  1.00 44.70      B    O
ATOM   2657  C   ASP   432      20.290 -10.982   0.598  1.00 35.78      B    C
ATOM   2658  O   ASP   432      19.410 -10.932  -0.264  1.00 37.15      B    O
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ATOM   2659  N   GLN   433      20.060 -11.395   1.835  1.00 32.85      B    N
ATOM   2660  CA  GLN   433      18.749 -11.887   2.205  1.00 31.54      B    C
ATOM   2661  CB  GLN   433      18.879 -12.932   3.305  1.00 29.75      B    C
ATOM   2662  CG  GLN   433      19.423 -14.245   2.794  1.00 28.29      B    C
ATOM   2663  CD  GLN   433      18.459 -14.955   1.850  1.00 26.47      B    C
ATOM   2664  OE1 GLN   433      18.828 -15.919   1.184  1.00 24.27      B    O
ATOM   2665  NE2 GLN   433      17.221 -14.481   1.794  1.00 26.30      B    N
ATOM   2666  C   GLN   433      17.823 -10.769   2.645  1.00 31.04      B    C
ATOM   2667  O   GLN   433      16.623 -10.974   2.805  1.00 32.65      B    O
ATOM   2668  N   ARG   434      18.373  -9.576   2.819  1.00 30.10      B    N
ATOM   2669  CA  ARG   434      17.588  -8.474   3.343  1.00 28.71      B    C
ATOM   2670  CB  ARG   434      18.518  -7.369   3.845  1.00 29.04      B    C
ATOM   2671  CG  ARG   434      19.390  -7.826   5.012  1.00 28.41      B    C
ATOM   2672  CD  ARG   434      20.174  -6.695   5.646  1.00 26.84      B    C
ATOM   2673  NE  ARG   434      21.266  -7.222   6.459  1.00 27.43      B    N
ATOM   2674  CZ  ARG   434      22.538  -6.869   6.315  1.00 25.70      B    C
ATOM   2675  NH1 ARG   434      23.473  -7.399   7.088  1.00 23.11      B    N
ATOM   2676  NH2 ARG   434      22.869  -5.978   5.398  1.00 25.28      B    N
ATOM   2677  C   ARG   434      16.569  -7.912   2.361  1.00 27.60      B    C
ATOM   2678  O   ARG   434      15.431  -7.664   2.747  1.00 27.25      B    O
ATOM   2679  N   VAL   435      16.951  -7.711   1.101  1.00 27.74      B    N
ATOM   2680  CA  VAL   435      15.975  -7.213   0.128  1.00 27.86      B    C
ATOM   2681  CB  VAL   435      16.599  -6.710  -1.199  1.00 26.45      B    C
ATOM   2682  CG1 VAL   435      17.515  -5.547  -0.943  1.00 27.10      B    C
ATOM   2683  CG2 VAL   435      17.315  -7.832  -1.890  1.00 27.00      B    C
ATOM   2684  C   VAL   435      14.992  -8.302  -0.237  1.00 28.30      B    C
ATOM   2685  O   VAL   435      13.890  -8.011  -0.709  1.00 30.16      B    O
ATOM   2686  N   LEU   436      15.389  -9.554  -0.022  1.00 27.85      B    N
ATOM   2687  CA  LEU   436      14.511 -10.686  -0.307  1.00 27.26      B    C
ATOM   2688  CB  LEU   436      15.312 -11.975  -0.467  1.00 27.16      B    C
ATOM   2689  CG  LEU   436      16.446 -12.004  -1.478  1.00 25.55      B    C
ATOM   2690  CD1 LEU   436      16.995 -13.421  -1.511  1.00 24.68      B    C
ATOM   2691  CD2 LEU   436      15.952 -11.565  -2.849  1.00 22.51      B    C
ATOM   2692  C   LEU   436      13.500 -10.894   0.808  1.00 27.27      B    C
ATOM   2693  O   LEU   436      12.351 -11.262   0.551  1.00 28.79      B    O
ATOM   2694  N   THR   437      13.936 -10.675   2.046  1.00 25.82      B    N
ATOM   2695  CA  THR   437      13.075 -10.904   3.199  1.00 23.86      B    C
ATOM   2696  CB  THR   437      13.887 -11.073   4.494  1.00 23.41      B    C
ATOM   2697  OG1 THR   437      14.782 -12.185   4.362  1.00 23.12      B    O
ATOM   2698  CG2 THR   437      12.949 -11.313   5.668  1.00 22.10      B    C
ATOM   2699  C   THR   437      12.090  -9.759   3.397  1.00 22.78      B    C
ATOM   2700  O   THR   437      12.464  -8.589   3.392  1.00 22.51      B    O
ATOM   2701  N   PRO   438      10.807 -10.095   3.566  1.00 23.25      B    N
ATOM   2702  CD  PRO   438      10.282 -11.469   3.511  1.00 24.11      B    C
ATOM   2703  CA  PRO   438       9.731  -9.118   3.742  1.00 22.75      B    C
ATOM   2704  CB  PRO   438       8.453  -9.957   3.639  1.00 23.28      B    C
ATOM   2705  CG  PRO   438       8.880 -11.258   3.049  1.00 23.27      B    C
ATOM   2706  C   PRO   438       9.847  -8.448   5.099  1.00 21.97      B    C
ATOM   2707  O   PRO   438       9.940  -9.124   6.125  1.00 19.45      B    O
ATOM   2708  N   ASN   439       9.837  -7.121   5.103  1.00 22.81      B    N
ATOM   2709  CA  ASN   439       9.866  -6.388   6.353  1.00 23.40      B    C
ATOM   2710  CB  ASN   439      10.627  -5.085   6.168  1.00 23.33      B    C
ATOM   2711  CG  ASN   439      11.355  -4.657   7.424  1.00 25.22      B    C
ATOM   2712  OD1 ASN   439      10.869  -4.854   8.538  1.00 26.16      B    O
ATOM   2713  ND2 ASN   439      12.533  -4.066   7.252  1.00 24.91      B    N
ATOM   2714  C   ASN   439       8.434  -6.118   6.820  1.00 24.31      B    C
ATOM   2715  O   ASN   439       7.949  -4.983   6.781  1.00 25.14      B    O
ATOM   2716  N   LEU   440       7.771  -7.186   7.256  1.00 24.30      B    N
ATOM   2717  CA  LEU   440       6.378  -7.145   7.690  1.00 25.09      B    C
ATOM   2718  CB  LEU   440       5.470  -7.703   6.589  1.00 23.69      B    C
ATOM   2719  CG  LEU   440       5.503  -6.977   5.247  1.00 24.08      B    C
ATOM   2720  CD1 LEU   440       4.757  -7.796   4.220  1.00 21.26      B    C
ATOM   2721  CD2 LEU   440       4.883  -5.584   5.401  1.00 23.50      B    C
ATOM   2722  C   LEU   440       6.163  -7.965   8.966  1.00 25.32      B    C
ATOM   2723  O   LEU   440       6.447  -9.164   9.007  1.00 24.66      B    O
ATOM   2724  N   VAL   441       5.647  -7.323  10.006  1.00 25.82      B    N
ATOM   2725  CA  VAL   441       5.096  -8.067  11.128  1.00 25.14      B    C
ATOM   2726  CB  VAL   441       5.633  -7.548  12.479  1.00 23.66      B    C
ATOM   2727  CG1 VAL   441       5.249  -8.500  13.580  1.00 21.33      B    C
ATOM   2728  CG2 VAL   441       7.139  -7.385  12.421  1.00 23.17      B    C
ATOM   2729  C   VAL   441       3.581  -7.889  11.083  1.00 26.87      B    C
ATOM   2730  O   VAL   441       3.078  -6.806  10.773  1.00 28.65      B    O
ATOM   2731  N   ALA   442       2.851  -8.953  11.384  1.00 26.88      B    N
ATOM   2732  CA  ALA   442       1.415  -8.952  11.179  1.00 27.49      B    C
ATOM   2733  CB  ALA   442       0.938 -10.369  10.972  1.00 27.84      B    C
ATOM   2734  C   ALA   442       0.648  -8.313  12.329  1.00 28.01      B    C
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ATOM   2735  O   ALA   442       0.863  -8.649  13.490  1.00 27.44      B    O
ATOM   2736  N   ALA   443      -0.260  -7.399  11.996  1.00 29.53      B    N
ATOM   2737  CA  ALA   443      -1.259  -6.929  12.950  1.00 29.76      B    C
ATOM   2738  CB  ALA   443      -1.135  -5.433  13.149  1.00 28.70      B    C
ATOM   2739  C   ALA   443      -2.662  -7.265  12.467  1.00 30.98      B    C
ATOM   2740  O   ALA   443      -2.873  -7.532  11.282  1.00 30.38      B    O
ATOM   2741  N   LEU   444      -3.610  -7.253  13.402  1.00 32.91      B    N
ATOM   2742  CA  LEU   444      -5.037  -7.307  13.095  1.00 33.56      B    C
ATOM   2743  CB  LEU   444      -5.841  -7.636  14.348  1.00 29.03      B    C
ATOM   2744  CG  LEU   444      -5.624  -8.983  15.021  1.00 26.74      B    C
ATOM   2745  CD1 LEU   444      -6.078  -8.902  16.462  1.00 24.31      B    C
ATOM   2746  CD2 LEU   444      -6.383 -10.061  14.269  1.00 25.72      B    C
ATOM   2747  C   LEU   444      -5.503  -5.958  12.565  1.00 37.13      B    C
ATOM   2748  O   LEU   444      -4.915  -4.914  12.869  1.00 36.31      B    O
ATOM   2749  N   PRO   445      -6.578  -5.967  11.766  1.00 40.64      B    N
ATOM   2750  CD  PRO   445      -7.291  -7.151  11.267  1.00 40.97      B    C
ATOM   2751  CA  PRO   445      -7.138  -4.733  11.216  1.00 43.51      B    C
ATOM   2752  CB  PRO   445      -8.215  -5.217  10.252  1.00 41.99      B    C
ATOM   2753  CG  PRO   445      -7.890  -6.645   9.998  1.00 41.69      B    C
ATOM   2754  C   PRO   445      -7.727  -3.918  12.343  1.00 47.02      B    C
ATOM   2755  O   PRO   445      -8.502  -4.429  13.149  1.00 47.30      B    O
ATOM   2756  N   PRO   446      -7.357  -2.637  12.422  1.00 50.39      B    N
ATOM   2757  CD  PRO   446      -6.431  -1.908  11.538  1.00 52.20      B    C
ATOM   2758  CA  PRO   446      -7.984  -1.768  13.418  1.00 52.13      B    C
ATOM   2759  CB  PRO   446      -7.269  -0.429  13.234  1.00 52.77      B    C
ATOM   2760  CG  PRO   446      -6.736  -0.467  11.833  1.00 53.26      B    C
ATOM   2761  C   PRO   446      -9.471  -1.691  13.117  1.00 52.85      B    C
ATOM   2762  O   PRO   446     -10.279  -1.732  14.075  1.00 53.37      B    O
ATOM   2763  OXT PRO   446      -9.793  -1.603  11.911  1.00 53.26      B    O
TER    2764       PRO   446                                              B
ATOM   2765  CB  THR   294      -8.672 -12.634  38.449  1.00 44.50      EGFA C
ATOM   2766  OG1 THR   294      -8.921 -13.914  39.043  1.00 46.09      EGFA O
ATOM   2767  CG2 THR   294      -9.367 -12.555  37.098  1.00 44.95      EGFA C
ATOM   2768  C   THR   294      -6.483 -13.598  37.580  1.00 42.73      EGFA C
ATOM   2769  O   THR   294      -6.465 -14.703  38.105  1.00 42.87      EGFA O
ATOM   2770  N   THR   294      -6.854 -11.126  37.620  1.00 43.75      EGFA N
ATOM   2771  CA  THR   294      -7.135 -12.410  38.303  1.00 43.33      EGFA C
ATOM   2772  N   ASN   295      -5.945 -13.381  36.380  1.00 40.79      EGFA N
ATOM   2773  CA  ASN   295      -5.062 -14.384  35.774  1.00 38.54      EGFA C
ATOM   2774  CB  ASN   295      -5.516 -14.783  34.369  1.00 38.56      EGFA C
ATOM   2775  CG  ASN   295      -4.655 -15.897  33.767  1.00 38.98      EGFA C
ATOM   2776  OD1 ASN   295      -3.455 -15.979  34.023  1.00 39.16      EGFA O
ATOM   2777  ND2 ASN   295      -5.271 -16.757  32.961  1.00 39.03      EGFA N
ATOM   2778  C   ASN   295      -3.656 -13.823  35.711  1.00 37.61      EGFA C
ATOM   2779  O   ASN   295      -3.211 -13.284  34.693  1.00 35.61      EGFA O
ATOM   2780  N   GLU   296      -2.965 -13.993  36.828  1.00 36.47      EGFA N
ATOM   2781  CA  GLU   296      -1.734 -13.293  37.119  1.00 36.71      EGFA C
ATOM   2782  CB  GLU   296      -1.337 -13.587  38.574  1.00 35.44      EGFA C
ATOM   2783  CG  GLU   296      -2.292 -12.988  39.619  1.00 33.45      EGFA C
ATOM   2784  CD  GLU   296      -3.482 -13.882  39.915  1.00 35.35      EGFA C
ATOM   2785  OE1 GLU   296      -3.596 -14.933  39.248  1.00 35.30      EGFA O
ATOM   2786  OE2 GLU   296      -4.300 -13.540  40.804  1.00 33.34      EGFA O
ATOM   2787  C   GLU   296      -0.588 -13.628  36.151  1.00 36.70      EGFA C
ATOM   2788  O   GLU   296       0.499 -13.060  36.244  1.00 36.33      EGFA O
ATOM   2789  N   CYS   297      -0.838 -14.530  35.207  1.00 36.97      EGFA N
ATOM   2790  CA  CYS   297       0.228 -15.025  34.351  1.00 37.51      EGFA C
ATOM   2791  C   CYS   297       0.233 -14.447  32.972  1.00 37.46      EGFA C
ATOM   2792  O   CYS   297       1.110 -14.750  32.177  1.00 36.37      EGFA O
ATOM   2793  CB  CYS   297       0.151 -16.521  34.243  1.00 38.66      EGFA C
ATOM   2794  SG  CYS   297       0.339 -17.282  35.863  1.00 41.23      EGFA S
ATOM   2795  N   LEU   298      -0.759 -13.620  32.688  1.00 38.90      EGFA N
ATOM   2796  CA  LEU   298      -0.761 -12.827  31.478  1.00 38.94      EGFA C
ATOM   2797  CB  LEU   298      -2.174 -12.332  31.205  1.00 38.48      EGFA C
ATOM   2798  CG  LEU   298      -3.084 -13.516  30.877  1.00 39.20      EGFA C
ATOM   2799  CD1 LEU   298      -4.519 -13.178  31.222  1.00 38.76      EGFA C
ATOM   2800  CD2 LEU   298      -2.920 -13.890  29.400  1.00 37.53      EGFA C
ATOM   2801  C   LEU   298       0.202 -11.667  31.660  1.00 40.24      EGFA C
ATOM   2802  O   LEU   298       0.430 -10.878  30.742  1.00 40.91      EGFA O
ATOM   2803  N   ASP   299       0.781 -11.567  32.851  1.00 40.63      EGFA N
ATOM   2804  CA  ASP   299       1.885 -10.648  33.038  1.00 41.29      EGFA C
ATOM   2805  CB  ASP   299       1.615  -9.716  34.207  1.00 45.11      EGFA C
ATOM   2806  CG  ASP   299       2.450  -8.461  34.133  1.00 48.48      EGFA C
ATOM   2807  OD1 ASP   299       2.944  -8.005  35.182  1.00 51.40      EGFA O
ATOM   2808  OD2 ASP   299       2.613  -7.931  33.013  1.00 50.27      EGFA O
ATOM   2809  C   ASP   299       3.199 -11.374  33.265  1.00 40.06      EGFA C
ATOM   2810  O   ASP   299       3.518 -11.759  34.383  1.00 39.62      EGFA O
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ATOM   2811  N   ASN   300       3.952 -11.557  32.187  1.00 38.77      EGFA N
ATOM   2812  CA  ASN   300       5.278 -12.140  32.257  1.00 38.83      EGFA C
ATOM   2813  CB  ASN   300       6.187 -11.246  33.093  1.00 40.88      EGFA C
ATOM   2814  CG  ASN   300       7.613 -11.245  32.593  1.00 43.06      EGFA C
ATOM   2815  OD1 ASN   300       8.562 -11.252  33.378  1.00 43.69      EGFA O
ATOM   2816  ND2 ASN   300       7.775 -11.234  31.273  1.00 44.81      EGFA N
ATOM   2817  C   ASN   300       5.256 -13.547  32.843  1.00 38.88      EGFA C
ATOM   2818  O   ASN   300       6.235 -13.997  33.448  1.00 38.75      EGFA O
ATOM   2819  N   ASN   301       4.136 -14.238  32.661  1.00 38.27      EGFA N
ATOM   2820  CA  ASN   301       3.977 -15.602  33.153  1.00 38.98      EGFA C
ATOM   2821  CB  ASN   301       5.029 -16.514  32.524  1.00 38.60      EGFA C
ATOM   2822  CG  ASN   301       4.603 -17.965  32.508  1.00 39.84      EGFA C
ATOM   2823  OD1 ASN   301       3.431 -18.277  32.280  1.00 39.37      EGFA O
ATOM   2824  ND2 ASN   301       5.554 -18.866  32.748  1.00 39.66      EGFA N
ATOM   2825  C   ASN   301       4.091 -15.648  34.676  1.00 39.19      EGFA C
ATOM   2826  O   ASN   301       4.368 -16.697  35.265  1.00 38.65      EGFA O
ATOM   2827  N   GLY   302       3.874 -14.496  35.305  1.00 38.94      EGFA N
ATOM   2828  CA  GLY   302       3.929 -14.420  36.752  1.00 39.47      EGFA C
ATOM   2829  C   GLY   302       5.356 -14.384  37.255  1.00 39.98      EGFA C
ATOM   2830  O   GLY   302       5.620 -14.710  38.408  1.00 40.36      EGFA O
ATOM   2831  N   GLY   303       6.277 -13.993  36.381  1.00 40.10      EGFA N
ATOM   2832  CA  GLY   303       7.674 -13.946  36.756  1.00 41.13      EGFA C
ATOM   2833  C   GLY   303       8.255 -15.337  36.912  1.00 41.77      EGFA C
ATOM   2834  O   GLY   303       9.411 -15.490  37.318  1.00 43.49      EGFA O
ATOM   2835  N   CYS   304       7.448 -16.347  36.582  1.00 41.53      EGFA N
ATOM   2836  CA  CYS   304       7.819 -17.757  36.718  1.00 39.56      EGFA C
ATOM   2837  C   CYS   304       8.848 -18.175  35.670  1.00 38.81      EGFA C
ATOM   2838  O   CYS   304       8.667 -17.908  34.483  1.00 39.26      EGFA O
ATOM   2839  CB  CYS   304       6.579 -18.636  36.564  1.00 38.73      EGFA C
ATOM   2840  SG  CYS   304       5.347 -18.462  37.890  1.00 37.07      EGFA S
ATOM   2841  N   SER   305       9.917 -18.843  36.093  1.00 37.94      EGFA N
ATOM   2842  CA  SER   305      10.966 -19.202  35.149  1.00 36.26      EGFA C
ATOM   2843  CB  SER   305      12.152 -19.862  35.870  1.00 34.90      EGFA C
ATOM   2844  OG  SER   305      11.790 -21.060  36.529  1.00 33.63      EGFA O
ATOM   2845  C   SER   305      10.398 -20.142  34.094  1.00 36.04      EGFA C
ATOM   2846  O   SER   305      10.667 -19.985  32.904  1.00 35.42      EGFA O
ATOM   2847  N   HIS   306       9.598 -21.105  34.547  1.00 36.85      EGFA N
ATOM   2848  CA  HIS   306       9.060 -22.156  33.689  1.00 36.68      EGFA C
ATOM   2849  CB  HIS   306       9.468 -23.524  34.237  1.00 37.58      EGFA C
ATOM   2850  CG  HIS   306      10.931 -23.805  34.109  1.00 38.79      EGFA C
ATOM   2851  CD2 HIS   306      12.012 -23.054  34.423  1.00 38.86      EGFA C
ATOM   2852  ND1 HIS   306      11.420 -24.974  33.567  1.00 39.47      EGFA N
ATOM   2853  CE1 HIS   306      12.739 -24.929  33.550  1.00 39.63      EGFA C
ATOM   2854  NE2 HIS   306      13.124 -23.774  34.064  1.00 39.05      EGFA N
ATOM   2855  C   HIS   306       7.541 -22.080  33.566  1.00 36.61      EGFA C
ATOM   2856  O   HIS   306       7.014 -21.231  32.842  1.00 36.74      EGFA O
ATOM   2857  N   VAL   307       6.839 -22.967  34.271  1.00 36.53      EGFA N
ATOM   2858  CA  VAL   307       5.381 -22.965  34.252  1.00 36.68      EGFA C
ATOM   2859  CB  VAL   307       4.793 -24.385  34.359  1.00 36.53      EGFA C
ATOM   2860  CG1 VAL   307       3.271 -24.316  34.440  1.00 33.02      EGFA C
ATOM   2861  CG2 VAL   307       5.210 -25.204  33.153  1.00 36.84      EGFA C
ATOM   2862  C   VAL   307       4.785 -22.135  35.370  1.00 37.94      EGFA C
ATOM   2863  O   VAL   307       5.269 -22.143  36.505  1.00 36.79      EGFA O
ATOM   2864  N   CYS   308       3.726 -21.413  35.019  1.00 40.08      EGFA N
ATOM   2865  CA  CYS   308       2.902 -20.690  35.978  1.00 41.42      EGFA C
ATOM   2866  C   CYS   308       1.562 -21.425  36.159  1.00 41.00      EGFA C
ATOM   2867  O   CYS   308       1.026 -22.009  35.211  1.00 40.92      EGFA O
ATOM   2868  CB  CYS   308       2.585 -19.294  35.465  1.00 42.46      EGFA C
ATOM   2869  SG  CYS   308       0.778 -19.184  35.372  1.00 49.21      EGFA S
ATOM   2870  N   ASN   309       1.016 -21.369  37.371  1.00 40.41      EGFA N
ATOM   2871  CA  ASN   309      -0.305 -21.909  37.647  1.00 39.28      EGFA C
ATOM   2872  CB  ASN   309      -0.193 -23.037  38.661  1.00 37.87      EGFA C
ATOM   2873  CG  ASN   309      -1.511 -23.706  38.923  1.00 37.08      EGFA C
ATOM   2874  OD1 ASN   309      -2.383 -23.738  38.061  1.00 37.19      EGFA O
ATOM   2875  ND2 ASN   309      -1.667 -24.249  40.116  1.00 38.27      EGFA N
ATOM   2876  C   ASN   309      -1.244 -20.825  38.181  1.00 40.43      EGFA C
ATOM   2877  O   ASN   309      -1.025 -20.272  39.260  1.00 41.33      EGFA O
ATOM   2878  N   ASP   310      -2.291 -20.529  37.417  1.00 41.20      EGFA N
ATOM   2879  CA  ASP   310      -3.285 -19.531  37.801  1.00 40.90      EGFA C
ATOM   2880  CB  ASP   310      -4.013 -19.017  36.553  1.00 42.26      EGFA C
ATOM   2881  CG  ASP   310      -4.927 -17.844  36.842  1.00 42.34      EGFA C
ATOM   2882  OD1 ASP   310      -4.822 -17.258  37.937  1.00 44.79      EGFA O
ATOM   2883  OD2 ASP   310      -5.749 -17.507  35.968  1.00 41.66      EGFA O
ATOM   2884  C   ASP   310      -4.297 -20.145  38.755  1.00 41.32      EGFA C
ATOM   2885  O   ASP   310      -5.140 -20.944  38.337  1.00 41.03      EGFA O
ATOM   2886  N   LEU   311      -4.206 -19.767  40.031  1.00 41.42      EGFA N
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ATOM   2887  CA  LEU   311      -5.173 -20.183  41.044  1.00 41.31      EGFA C
ATOM   2888  CB  LEU   311      -4.563 -20.085  42.431  1.00 38.52      EGFA C
ATOM   2889  CG  LEU   311      -3.108 -20.509  42.498  1.00 36.88      EGFA C
ATOM   2890  CD1 LEU   311      -2.561 -20.187  43.872  1.00 37.89      EGFA C
ATOM   2891  CD2 LEU   311      -2.991 -21.987  42.182  1.00 34.94      EGFA C
ATOM   2892  C   LEU   311      -6.398 -19.289  40.995  1.00 42.14      EGFA C
ATOM   2893  O   LEU   311      -6.479 -18.376  40.185  1.00 41.25      EGFA O
ATOM   2894  N   LYS   312      -7.360 -19.563  41.862  1.00 43.27      EGFA N
ATOM   2895  CA  LYS   312      -8.478 -18.658  42.005  1.00 45.45      EGFA C
ATOM   2896  CB  LYS   312      -9.624 -19.345  42.749  1.00 48.60      EGFA C
ATOM   2897  CG  LYS   312     -10.251 -20.511  41.979  1.00 53.73      EGFA C
ATOM   2898  CD  LYS   312     -11.599 -20.945  42.575  1.00 56.82      EGFA C
ATOM   2899  CE  LYS   312     -12.280 -22.005  41.700  1.00 57.14      EGFA C
ATOM   2900  NZ  LYS   312     -13.550 -22.527  42.291  1.00 57.94      EGFA N
ATOM   2901  C   LYS   312      -7.973 -17.464  42.793  1.00 44.13      EGFA C
ATOM   2902  O   LYS   312      -8.229 -16.315  42.434  1.00 44.64      EGFA O
ATOM   2903  N   ILE   313      -7.234 -17.754  43.860  1.00 43.02      EGFA N
ATOM   2904  CA  ILE   313      -6.706 -16.727  44.744  1.00 41.44      EGFA C
ATOM   2905  CB  ILE   313      -6.987 -17.073  46.217  1.00 42.03      EGFA C
ATOM   2906  CG2 ILE   313      -7.416 -15.833  46.978  1.00 40.16      EGFA C
ATOM   2907  CG1 ILE   313      -8.083 -18.140  46.283  1.00 43.15      EGFA C
ATOM   2908  CD1 ILE   313      -9.026 -17.992  47.445  1.00 43.53      EGFA C
ATOM   2909  C   ILE   313      -5.207 -16.672  44.521  1.00 40.70      EGFA C
ATOM   2910  O   ILE   313      -4.445 -17.408  45.151  1.00 42.01      EGFA O
ATOM   2911  N   GLY   314      -4.797 -15.805  43.605  1.00 39.34      EGFA N
ATOM   2912  CA  GLY   314      -3.396 -15.694  43.255  1.00 38.80      EGFA C
ATOM   2913  C   GLY   314      -2.928 -16.707  42.230  1.00 38.26      EGFA C
ATOM   2914  O   GLY   314      -3.707 -17.249  41.456  1.00 37.64      EGFA O
ATOM   2915  N   TYR   315      -1.625 -16.948  42.226  1.00 38.97      EGFA N
ATOM   2916  CA  TYR   315      -1.028 -17.987  41.405  1.00 38.95      EGFA C
ATOM   2917  CB  TYR   315      -0.553 -17.405  40.076  1.00 37.90      EGFA C
ATOM   2918  CG  TYR   315       0.616 -16.457  40.208  1.00 38.39      EGFA C
ATOM   2919  CD1 TYR   315       1.874 -16.788  39.706  1.00 38.94      EGFA C
ATOM   2920  CE1 TYR   315       2.942 -15.906  39.803  1.00 38.15      EGFA C
ATOM   2921  CD2 TYR   315       0.459 -15.216  40.807  1.00 38.29      EGFA C
ATOM   2922  CE2 TYR   315       1.517 -14.333  40.910  1.00 38.40      EGFA C
ATOM   2923  CZ  TYR   315       2.756 -14.675  40.405  1.00 38.57      EGFA C
ATOM   2924  OH  TYR   315       3.805 -13.783  40.526  1.00 37.81      EGFA O
ATOM   2925  C   TYR   315       0.153 -18.612  42.123  1.00 39.94      EGFA C
ATOM   2926  O   TYR   315       0.364 -18.401  43.323  1.00 40.28      EGFA O
ATOM   2927  N   GLU   316       0.933 -19.369  41.364  1.00 41.83      EGFA N
ATOM   2928  CA  GLU   316       2.158 -19.964  41.871  1.00 43.58      EGFA C
ATOM   2929  CB  GLU   316       1.819 -21.179  42.721  1.00 44.75      EGFA C
ATOM   2930  CG  GLU   316       1.030 -22.213  41.959  1.00 48.82      EGFA C
ATOM   2931  CD  GLU   316       0.823 -23.461  42.761  1.00 52.94      EGFA C
ATOM   2932  OE1 GLU   316       1.123 -23.438  43.971  1.00 57.20      EGFA O
ATOM   2933  OE2 GLU   316       0.381 -24.475  42.184  1.00 54.04      EGFA O
ATOM   2934  C   GLU   316       3.041 -20.383  40.701  1.00 42.80      EGFA C
ATOM   2935  O   GLU   316       2.568 -20.500  39.575  1.00 44.00      EGFA O
ATOM   2936  N   CYS   317       4.326 -20.592  40.957  1.00 42.14      EGFA N
ATOM   2937  CA  CYS   317       5.195 -21.137  39.927  1.00 41.35      EGFA C
ATOM   2938  C   CYS   317       5.412 -22.630  40.169  1.00 42.56      EGFA C
ATOM   2939  O   CYS   317       5.470 -23.079  41.316  1.00 42.57      EGFA O
ATOM   2940  CB  CYS   317       6.538 -20.413  39.925  1.00 38.97      EGFA C
ATOM   2941  SG  CYS   317       6.442 -18.628  39.586  1.00 35.62      EGFA S
ATOM   2942  N   LEU   318       5.547 -23.397  39.089  1.00 43.52      EGFA N
ATOM   2943  CA  LEU   318       5.832 -24.820  39.210  1.00 43.40      EGFA C
ATOM   2944  CB  LEU   318       4.653 -25.640  38.689  1.00 41.86      EGFA C
ATOM   2945  CG  LEU   318       3.328 -25.268  39.355  1.00 41.42      EGFA C
ATOM   2946  CD1 LEU   318       2.255 -26.234  38.937  1.00 42.17      EGFA C
ATOM   2947  CD2 LEU   318       3.481 -25.286  40.855  1.00 41.53      EGFA C
ATOM   2948  C   LEU   318       7.098 -25.185  38.453  1.00 44.60      EGFA C
ATOM   2949  O   LEU   318       7.489 -24.493  37.510  1.00 44.39      EGFA O
ATOM   2950  N   CYS   319       7.738 -26.273  38.875  1.00 46.62      EGFA N
ATOM   2951  CA  CYS   319       9.002 -26.685  38.276  1.00 48.75      EGFA C
ATOM   2952  C   CYS   319       8.993 -28.073  37.639  1.00 48.42      EGFA C
ATOM   2953  O   CYS   319       8.274 -28.970  38.077  1.00 47.58      EGFA O
ATOM   2954  CB  CYS   319      10.123 -26.615  39.317  1.00 49.62      EGFA C
ATOM   2955  SG  CYS   319      10.467 -24.933  39.923  1.00 50.75      EGFA S
ATOM   2956  N   PRO   320       9.812 -28.263  36.593  1.00 49.01      EGFA N
ATOM   2957  CD  PRO   320      10.541 -27.229  35.842  1.00 48.55      EGFA C
ATOM   2958  CA  PRO   320      10.067 -29.605  36.060  1.00 49.42      EGFA C
ATOM   2959  CB  PRO   320      11.111 -29.369  34.972  1.00 48.61      EGFA C
ATOM   2960  CG  PRO   320      10.927 -27.948  34.582  1.00 48.27      EGFA C
ATOM   2961  C   PRO   320      10.600 -30.500  37.165  1.00 50.82      EGFA C
ATOM   2962  O   PRO   320      11.453 -30.086  37.952  1.00 50.19      EGFA O
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ATOM   2963  N   ASP   321      10.096 -31.724  37.234  1.00 52.17      EGFA N
ATOM   2964  CA  ASP   321      10.479 -32.600  38.325  1.00 52.72      EGFA C
ATOM   2965  CB  ASP   321       9.810 -33.970  38.187  1.00 57.23      EGFA C
ATOM   2966  CG  ASP   321       9.182 -34.447  39.499  1.00 61.91      EGFA C
ATOM   2967  OD1 ASP   321       8.807 -33.586  40.332  1.00 63.09      EGFA O
ATOM   2968  OD2 ASP   321       9.064 -35.680  39.701  1.00 64.11      EGFA O
ATOM   2969  C   ASP   321      11.987 -32.742  38.310  1.00 51.06      EGFA C
ATOM   2970  O   ASP   321      12.599 -32.869  37.246  1.00 49.86      EGFA O
ATOM   2971  N   GLY   322      12.577 -32.695  39.499  1.00 49.84      EGFA N
ATOM   2972  CA  GLY   322      14.023 -32.681  39.614  1.00 48.51      EGFA C
ATOM   2973  C   GLY   322      14.592 -31.285  39.793  1.00 47.34      EGFA C
ATOM   2974  O   GLY   322      15.729 -31.131  40.239  1.00 47.93      EGFA O
ATOM   2975  N   PHE   323      13.807 -30.266  39.445  1.00 45.29      EGFA N
ATOM   2976  CA  PHE   323      14.247 -28.880  39.583  1.00 42.20      EGFA C
ATOM   2977  CB  PHE   323      13.607 -27.999  38.517  1.00 40.51      EGFA C
ATOM   2978  CG  PHE   323      14.157 -28.215  37.141  1.00 38.07      EGFA C
ATOM   2979  CD1 PHE   323      14.250 -29.489  36.610  1.00 36.97      EGFA C
ATOM   2980  CD2 PHE   323      14.550 -27.135  36.364  1.00 37.05      EGFA C
ATOM   2981  CE1 PHE   323      14.723 -29.681  35.330  1.00 37.63      EGFA C
ATOM   2982  CE2 PHE   323      15.024 -27.317  35.082  1.00 36.22      EGFA C
ATOM   2983  CZ  PHE   323      15.110 -28.590  34.561  1.00 37.83      EGFA C
ATOM   2984  C   PHE   323      13.890 -28.332  40.947  1.00 41.10      EGFA C
ATOM   2985  O   PHE   323      13.022 -28.857  41.631  1.00 40.98      EGFA O
ATOM   2986  N   GLN   324      14.567 -27.266  41.339  1.00 41.32      EGFA N
ATOM   2987  CA  GLN   324      14.326 -26.657  42.637  1.00 42.35      EGFA C
ATOM   2988  CB  GLN   324      15.645 -26.527  43.393  1.00 45.11      EGFA C
ATOM   2989  CG  GLN   324      15.543 -26.714  44.897  1.00 48.90      EGFA C
ATOM   2990  CD  GLN   324      16.897 -26.588  45.584  1.00 50.71      EGFA C
ATOM   2991  OE1 GLN   324      16.978 -26.425  46.808  1.00 51.49      EGFA O
ATOM   2992  NE2 GLN   324      17.972 -26.660  44.793  1.00 50.40      EGFA N
ATOM   2993  C   GLN   324      13.729 -25.281  42.408  1.00 41.37      EGFA C
ATOM   2994  O   GLN   324      14.076 -24.607  41.439  1.00 41.39      EGFA O
ATOM   2995  N   LEU   325      12.831 -24.856  43.287  1.00 40.78      EGFA N
ATOM   2996  CA  LEU   325      12.250 -23.527  43.147  1.00 40.37      EGFA C
ATOM   2997  CB  LEU   325      10.740 -23.570  43.373  1.00 38.89      EGFA C
ATOM   2998  CG  LEU   325      10.036 -22.248  43.063  1.00 37.99      EGFA C
ATOM   2999  CD1 LEU   325      10.139 -21.941  41.584  1.00 35.18      EGFA C
ATOM   3000  CD2 LEU   325       8.592 -22.331  43.485  1.00 37.81      EGFA C
ATOM   3001  C   LEU   325      12.880 -22.553  44.131  1.00 40.79      EGFA C
ATOM   3002  O   LEU   325      12.896 -22.806  45.337  1.00 40.04      EGFA O
ATOM   3003  N   VAL   326      13.402 -21.442  43.618  1.00 41.36      EGFA N
ATOM   3004  CA  VAL   326      14.077 -20.477  44.476  1.00 42.53      EGFA C
ATOM   3005  CB  VAL   326      15.592 -20.351  44.122  1.00 41.99      EGFA C
ATOM   3006  CG1 VAL   326      16.010 -21.475  43.201  1.00 41.24      EGFA C
ATOM   3007  CG2 VAL   326      15.883 -19.007  43.506  1.00 41.93      EGFA C
ATOM   3008  C   VAL   326      13.418 -19.109  44.385  1.00 43.44      EGFA C
ATOM   3009  O   VAL   326      12.929 -18.716  43.332  1.00 43.12      EGFA O
ATOM   3010  N   ALA   327      13.394 -18.390  45.501  1.00 45.25      EGFA N
ATOM   3011  CA  ALA   327      12.751 -17.084  45.539  1.00 47.09      EGFA C
ATOM   3012  CB  ALA   327      13.443 -16.139  44.577  1.00 46.26      EGFA C
ATOM   3013  C   ALA   327      11.270 -17.201  45.185  1.00 48.01      EGFA C
ATOM   3014  O   ALA   327      10.567 -16.197  45.078  1.00 48.60      EGFA O
ATOM   3015  N   GLN   328      10.813 -18.435  44.997  1.00 49.94      EGFA N
ATOM   3016  CA  GLN   328       9.413 -18.717  44.692  1.00 51.60      EGFA C
ATOM   3017  CB  GLN   328       8.492 -17.860  45.563  1.00 51.40      EGFA C
ATOM   3018  CG  GLN   328       7.372 -18.643  46.191  1.00 53.05      EGFA C
ATOM   3019  CD  GLN   328       7.288 -18.392  47.666  1.00 56.41      EGFA C
ATOM   3020  OE1 GLN   328       7.462 -19.307  48.477  1.00 58.59      EGFA O
ATOM   3021  NE2 GLN   328       7.022 -17.136  48.036  1.00 57.77      EGFA N
ATOM   3022  C   GLN   328       9.050 -18.516  43.224  1.00 51.40      EGFA C
ATOM   3023  O   GLN   328       7.872 -18.574  42.863  1.00 52.05      EGFA O
ATOM   3024  N   ARG   329      10.045 -18.278  42.376  1.00 52.02      EGFA N
ATOM   3025  CA  ARG   329       9.759 -18.102  40.962  1.00 53.90      EGFA C
ATOM   3026  CB  ARG   329       9.202 -16.710  40.719  1.00 54.36      EGFA C
ATOM   3027  CG  ARG   329      10.176 -15.594  40.973  1.00 55.41      EGFA C
ATOM   3028  CD  ARG   329       9.425 -14.289  40.909  1.00 56.46      EGFA C
ATOM   3029  NE  ARG   329       8.174 -14.397  41.644  1.00 57.62      EGFA N
ATOM   3030  CZ  ARG   329       7.271 -13.427  41.681  1.00 58.17      EGFA C
ATOM   3031  NH1 ARG   329       7.499 -12.294  41.018  1.00 57.94      EGFA N
ATOM   3032  NH2 ARG   329       6.159 -13.570  42.390  1.00 58.09      EGFA N
ATOM   3033  C   ARG   329      10.921 -18.337  40.015  1.00 54.26      EGFA C
ATOM   3034  O   ARG   329      10.899 -17.869  38.881  1.00 54.09      EGFA O
ATOM   3035  N   ARG   330      11.925 -19.079  40.459  1.00 55.91      EGFA N
ATOM   3036  CA  ARG   330      12.957 -19.541  39.545  1.00 56.83      EGFA C
ATOM   3037  CB  ARG   330      14.202 -18.663  39.676  1.00 59.07      EGFA C
ATOM   3038  CG  ARG   330      15.156 -18.777  38.494  1.00 63.56      EGFA C
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ATOM   3039  CD  ARG   330      16.009 -17.526  38.337  1.00 67.44      EGFA C
ATOM   3040  NE  ARG   330      17.205 -17.544  39.183  1.00 71.71      EGFA N
ATOM   3041  CZ  ARG   330      18.101 -16.560  39.232  1.00 73.25      EGFA C
ATOM   3042  NH1 ARG   330      17.931 -15.476  38.483  1.00 74.17      EGFA N
ATOM   3043  NH2 ARG   330      19.165 -16.658  40.026  1.00 73.57      EGFA N
ATOM   3044  C   ARG   330      13.307 -21.007  39.805  1.00 56.14      EGFA C
ATOM   3045  O   ARG   330      13.624 -21.398  40.931  1.00 55.45      EGFA O
ATOM   3046  N   CYS   331      13.237 -21.821  38.757  1.00 55.78      EGFA N
ATOM   3047  CA  CYS   331      13.615 -23.219  38.876  1.00 55.78      EGFA C
ATOM   3048  C   CYS   331      15.046 -23.384  38.407  1.00 56.71      EGFA C
ATOM   3049  O   CYS   331      15.424 -22.886  37.344  1.00 54.16      EGFA O
ATOM   3050  CB  CYS   331      12.707 -24.105  38.024  1.00 54.71      EGFA C
ATOM   3051  SG  CYS   331      10.917 -23.862  38.247  1.00 52.34      EGFA S
ATOM   3052  N   GLU   332      15.843 -24.075  39.210  1.00 59.67      EGFA N
ATOM   3053  CA  GLU   332      17.181 -24.445  38.793  1.00 63.04      EGFA C
ATOM   3054  CB  GLU   332      18.234 -23.765  39.677  1.00 63.37      EGFA C
ATOM   3055  CG  GLU   332      17.872 -23.624  41.151  1.00 64.27      EGFA C
ATOM   3056  CD  GLU   332      18.797 -22.655  41.891  1.00 64.91      EGFA C
ATOM   3057  OE1 GLU   332      19.367 -23.051  42.935  1.00 64.31      EGFA O
ATOM   3058  OE2 GLU   332      18.951 -21.499  41.428  1.00 64.07      EGFA O
ATOM   3059  C   GLU   332      17.350 -25.953  38.811  1.00 65.33      EGFA C
ATOM   3060  O   GLU   332      17.082 -26.620  39.816  1.00 64.39      EGFA O
ATOM   3061  N   ASP   333      17.780 -26.476  37.667  1.00 68.69      EGFA N
ATOM   3062  CA  ASP   333      17.880 -27.910  37.433  1.00 72.25      EGFA C
ATOM   3063  CB  ASP   333      18.483 -28.168  36.056  1.00 74.16      EGFA C
ATOM   3064  CG  ASP   333      19.649 -27.250  35.762  1.00 76.50      EGFA C
ATOM   3065  OD1 ASP   333      19.458 -26.013  35.827  1.00 77.91      EGFA O
ATOM   3066  OD2 ASP   333      20.754 -27.757  35.476  1.00 77.38      EGFA O
ATOM   3067  C   ASP   333      18.756 -28.536  38.488  1.00 73.49      EGFA C
ATOM   3068  O   ASP   333      18.526 -29.673  38.894  1.00 73.58      EGFA O
ATOM   3069  N   ILE   334      19.769 -27.780  38.903  1.00 75.52      EGFA N
ATOM   3070  CA  ILE   334      20.587 -28.098  40.069  1.00 77.98      EGFA C
ATOM   3071  CB  ILE   334      20.070 -27.299  41.320  1.00 78.68      EGFA C
ATOM   3072  CG2 ILE   334      19.986 -28.191  42.551  1.00 78.54      EGFA C
ATOM   3073  CG1 ILE   334      20.989 -26.098  41.585  1.00 78.89      EGFA C
ATOM   3074  CD1 ILE   334      21.191 -25.170  40.391  1.00 77.96      EGFA C
ATOM   3075  C   ILE   334      20.666 -29.597  40.363  1.00 79.11      EGFA C
ATOM   3076  O   ILE   334      21.755 -30.162  40.118  1.00 79.71      EGFA O
ATOM   3077  OXT ILE   334      19.656 -30.196  40.802  1.00 79.97      EGFA O
TER    3078       ILE   334                                              EGFA
ATOM   3079  CA  CA      1      -5.688 -15.911  40.122  1.00 56.81      ION  C
TER    3080       CA      1                                              ION
END
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TABLE 35.3

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ATOM      1  CB  THR    61       7.625 -20.113   2.894  1.00120.20      A    C
ATOM      2  OG1 THR    61       7.048 -19.215   1.936  1.00120.97      A    O
ATOM      3  CG2 THR    61       7.446 -19.537   4.289  1.00121.74      A    C
ATOM      4  C   THR    61       9.869 -19.003   2.758  1.00115.49      A    C
ATOM      5  O   THR    61      10.710 -18.870   3.648  1.00115.58      A    O
ATOM      6  N   THR    61       9.741 -21.360   3.461  1.00119.24      A    N
ATOM      7  CA  THR    61       9.132 -20.323   2.577  1.00118.55      A    C
ATOM      8  N   ALA    62       9.546 -18.032   1.907  1.00111.50      A    N
ATOM      9  CA  ALA    62      10.296 -16.784   1.830  1.00106.53      A    C
ATOM     10  CB  ALA    62      10.124 -16.161   0.455  1.00108.21      A    C
ATOM     11  C   ALA    62       9.882 -15.789   2.902  1.00102.91      A    C
ATOM     12  O   ALA    62       8.701 -15.600   3.174  1.00101.98      A    O
ATOM     13  N   THR    63      10.870 -15.145   3.501  1.00 98.29      A    N
ATOM     14  CA  THR    63      10.624 -14.157   4.534  1.00 93.32      A    C
ATOM     15  CB  THR    63      11.644 -14.326   5.679  1.00 92.70      A    C
ATOM     16  OG1 THR    63      12.973 -14.322   5.147  1.00 92.34      A    O
ATOM     17  CG2 THR    63      11.422 -15.647   6.398  1.00 92.08      A    C
ATOM     18  C   THR    63      10.716 -12.747   3.944  1.00 89.66      A    C
ATOM     19  O   THR    63      11.156 -12.571   2.810  1.00 90.88      A    O
ATOM     20  N   PHE    64      10.280 -11.747   4.705  1.00 83.77      A    N
ATOM     21  CA  PHE    64      10.405 -10.353   4.278  1.00 77.76      A    C
ATOM     22  CB  PHE    64       9.065  -9.825   3.799  1.00 72.88      A    C
ATOM     23  CG  PHE    64       9.028  -8.343   3.648  1.00 67.65      A    C
ATOM     24  CD1 PHE    64       9.305  -7.752   2.429  1.00 66.67      A    C
ATOM     25  CD2 PHE    64       8.697  -7.530   4.726  1.00 66.49      A    C
ATOM     26  CE1 PHE    64       9.251  -6.370   2.285  1.00 66.42      A    C
ATOM     27  CE2 PHE    64       8.640  -6.150   4.594  1.00 64.45      A    C
ATOM     28  CZ  PHE    64       8.917  -5.567   3.374  1.00 64.76      A    C
ATOM     29  C   PHE    64      10.936  -9.426   5.370  1.00 76.67      A    C
ATOM     30  O   PHE    64      10.563  -9.557   6.540  1.00 76.03      A    O
ATOM     31  N   HIS    65      11.787  -8.477   4.975  1.00 75.50      A    N
ATOM     32  CA  HIS    65      12.561  -7.686   5.928  1.00 74.60      A    C
ATOM     33  CB  HIS    65      14.003  -8.192   5.961  1.00 74.07      A    C
ATOM     34  CG  HIS    65      14.117  -9.659   6.235  1.00 74.70      A    C
ATOM     35  CD2 HIS    65      13.881 -10.735   5.448  1.00 74.67      A    C
ATOM     36  ND1 HIS    65      14.517 -10.161   7.456  1.00 75.55      A    N
ATOM     37  CE1 HIS    65      14.523 -11.481   7.409  1.00 74.80      A    C
ATOM     38  NE2 HIS    65      14.141 -11.855   6.201  1.00 74.59      A    N
ATOM     39  C   HIS    65      12.556  -6.187   5.642  1.00 73.68      A    C
ATOM     40  O   HIS    65      12.678  -5.755   4.498  1.00 73.21      A    O
ATOM     41  N   ARG    66      12.425  -5.397   6.700  1.00 73.29      A    N
ATOM     42  CA  ARG    66      12.508  -3.952   6.586  1.00 73.63      A    C
ATOM     43  CB  ARG    66      11.131  -3.320   6.801  1.00 80.94      A    C
ATOM     44  CG  ARG    66      10.664  -3.376   8.239  1.00 91.57      A    C
ATOM     45  CD  ARG    66       9.465  -2.490   8.486  1.00102.14      A    C
ATOM     46  NE  ARG    66       9.120  -2.462   9.905  1.00113.95      A    N
ATOM     47  CZ  ARG    66       9.564  -1.551  10.763  1.00120.16      A    C
ATOM     48  NH1 ARG    66       9.200  -1.602  12.037  1.00124.56      A    N
ATOM     49  NH2 ARG    66      10.368  -0.586  10.342  1.00124.67      A    N
ATOM     50  C   ARG    66      13.482  -3.420   7.630  1.00 68.82      A    C
ATOM     51  O   ARG    66      13.789  -4.088   8.605  1.00 69.03      A    O
ATOM     52  N   CYS    67      13.974  -2.210   7.425  1.00 64.02      A    N
ATOM     53  CA  CYS    67      14.838  -1.590   8.414  1.00 57.74      A    C
ATOM     54  CB  CYS    67      15.397  -0.279   7.865  1.00 55.67      A    C
ATOM     55  SG  CYS    67      16.287   0.702   9.068  1.00 43.75      A    S
ATOM     56  C   CYS    67      14.043  -1.320   9.685  1.00 55.30      A    C
ATOM     57  O   CYS    67      12.919  -0.825   9.630  1.00 53.23      A    O
ATOM     58  N   ALA    68      14.630  -1.644  10.828  1.00 52.57      A    N
ATOM     59  CA  ALA    68      13.953  -1.434  12.097  1.00 51.78      A    C
ATOM     60  CB  ALA    68      14.818  -1.940  13.236  1.00 48.43      A    C
ATOM     61  C   ALA    68      13.624   0.043  12.306  1.00 53.12      A    C
ATOM     62  O   ALA    68      12.511   0.389  12.700  1.00 53.69      A    O
ATOM     63  N   LYS    69      14.596   0.914  12.042  1.00 53.95      A    N
ATOM     64  CA  LYS    69      14.435   2.342  12.306  1.00 53.04      A    C
ATOM     65  CB  LYS    69      15.814   3.015  12.422  1.00 55.99      A    C
ATOM     66  CG  LYS    69      16.931   2.058  12.899  1.00 57.69      A    C
ATOM     67  CD  LYS    69      17.593   2.502  14.208  1.00 57.50      A    C
ATOM     68  CE  LYS    69      17.940   1.307  15.091  1.00 57.22      A    C
ATOM     69  NZ  LYS    69      18.773   1.709  16.260  1.00 57.57      A    N
ATOM     70  C   LYS    69      13.620   2.975  11.188  1.00 51.24      A    C
ATOM     71  O   LYS    69      14.050   3.061  10.049  1.00 49.56      A    O
ATOM     72  N   ASP    70      12.429   3.424  11.537  1.00 51.12      A    N
ATOM     73  CA  ASP    70      11.407   3.714  10.555  1.00 49.83      A    C
ATOM     74  CB  ASP    70      10.109   4.015  11.279  1.00 54.30      A    C
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ATOM     75  CG  ASP   70       8.902   3.574  10.492  1.00 60.23      A    C
ATOM     76  OD1 ASP   70       8.761   2.334  10.283  1.00 59.99      A    O
ATOM     77  OD2 ASP   70       8.109   4.472  10.087  1.00 61.75      A    O
ATOM     78  C   ASP   70      11.715   4.837   9.567  1.00 45.91      A    C
ATOM     79  O   ASP   70      11.398   4.736   8.386  1.00 43.79      A    O
ATOM     80  N   PRO   71      12.322   5.931  10.040  1.00 43.28      A    N
ATOM     81  CD  PRO   71      12.626   6.241  11.448  1.00 40.22      A    C
ATOM     82  CA  PRO   71      12.627   7.057   9.148  1.00 41.43      A    C
ATOM     83  CB  PRO   71      12.989   8.182  10.108  1.00 39.87      A    C
ATOM     84  CG  PRO   71      13.420   7.490  11.346  1.00 39.36      A    C
ATOM     85  C   PRO   71      13.734   6.767   8.125  1.00 40.85      A    C
ATOM     86  O   PRO   71      13.979   7.562   7.204  1.00 41.69      A    O
ATOM     87  N   TRP   72      14.380   5.614   8.279  1.00 39.17      A    N
ATOM     88  CA  TRP   72      15.426   5.175   7.362  1.00 37.15      A    C
ATOM     89  CB  TRP   72      16.523   4.486   8.133  1.00 33.24      A    C
ATOM     90  CG  TRP   72      17.216   5.367   9.057  1.00 30.60      A    C
ATOM     91  CD2 TRP   72      18.253   4.995   9.959  1.00 28.45      A    C
ATOM     92  CE2 TRP   72      18.678   6.174  10.615  1.00 29.35      A    C
ATOM     93  CE3 TRP   72      18.863   3.785  10.273  1.00 24.28      A    C
ATOM     94  CD1 TRP   72      17.045   6.712   9.194  1.00 32.13      A    C
ATOM     95  NE1 TRP   72      17.923   7.207  10.132  1.00 31.43      A    N
ATOM     96  CZ2 TRP   72      19.684   6.177  11.563  1.00 28.45      A    C
ATOM     97  CZ3 TRP   72      19.860   3.779  11.210  1.00 29.40      A    C
ATOM     98  CH2 TRP   72      20.268   4.971  11.852  1.00 31.73      A    C
ATOM     99  C   TRP   72      14.944   4.217   6.286  1.00 39.33      A    C
ATOM    100  O   TRP   72      15.744   3.741   5.476  1.00 39.93      A    O
ATOM    101  N   ARG   73      13.648   3.916   6.296  1.00 41.01      A    N
ATOM    102  CA  ARG   73      13.065   2.968   5.354  1.00 41.83      A    C
ATOM    103  CB  ARG   73      11.741   2.443   5.903  1.00 43.30      A    C
ATOM    104  CG  ARG   73      11.891   1.798   7.263  1.00 47.92      A    C
ATOM    105  CD  ARG   73      10.582   1.222   7.765  1.00 52.48      A    C
ATOM    106  NE  ARG   73      10.042   0.197   6.879  1.00 56.62      A    N
ATOM    107  CZ  ARG   73       8.761   0.126   6.541  1.00 58.69      A    C
ATOM    108  NH1 ARG   73       7.911   1.025   7.021  1.00 60.74      A    N
ATOM    109  NH2 ARG   73       8.332  -0.841   5.741  1.00 57.82      A    N
ATOM    110  C   ARG   73      12.840   3.653   4.024  1.00 40.96      A    C
ATOM    111  O   ARG   73      12.572   4.841   3.988  1.00 40.86      A    O
ATOM    112  N   LEU   74      12.966   2.913   2.932  1.00 41.26      A    N
ATOM    113  CA  LEU   74      12.781   3.500   1.606  1.00 43.15      A    C
ATOM    114  CB  LEU   74      14.137   3.683   0.914  1.00 42.05      A    C
ATOM    115  CG  LEU   74      15.200   4.372   1.776  1.00 41.09      A    C
ATOM    116  CD1 LEU   74      16.600   4.020   1.259  1.00 40.47      A    C
ATOM    117  CD2 LEU   74      14.945   5.868   1.781  1.00 36.19      A    C
ATOM    118  C   LEU   74      11.885   2.601   0.767  1.00 43.59      A    C
ATOM    119  O   LEU   74      12.341   1.943  -0.180  1.00 45.64      A    O
ATOM    120  N   PRO   75      10.595   2.547   1.122  1.00 42.35      A    N
ATOM    121  CD  PRO   75      10.053   3.206   2.322  1.00 40.81      A    C
ATOM    122  CA  PRO   75       9.605   1.691   0.465  1.00 41.19      A    C
ATOM    123  CB  PRO   75       8.377   1.796   1.370  1.00 40.54      A    C
ATOM    124  CG  PRO   75       8.581   3.023   2.174  1.00 39.32      A    C
ATOM    125  C   PRO   75       9.306   2.079  -0.981  1.00 40.71      A    C
ATOM    126  O   PRO   75       9.277   3.258  -1.329  1.00 39.79      A    O
ATOM    127  N   GLY   76       9.090   1.064  -1.817  1.00 40.71      A    N
ATOM    128  CA  GLY   76       8.969   1.277  -3.250  1.00 38.99      A    C
ATOM    129  C   GLY   76      10.105   0.572  -3.974  1.00 36.52      A    C
ATOM    130  O   GLY   76      10.163   0.540  -5.205  1.00 35.56      A    O
ATOM    131  N   THR   77      11.017  -0.005  -3.206  1.00 34.53      A    N
ATOM    132  CA  THR   77      12.237  -0.530  -3.795  1.00 35.21      A    C
ATOM    133  CB  THR   77      13.366   0.542  -3.812  1.00 34.11      A    C
ATOM    134  OG1 THR   77      12.900   1.742  -4.462  1.00 34.86      A    O
ATOM    135  CG2 THR   77      14.572   0.009  -4.557  1.00 31.17      A    C
ATOM    136  C   THR   77      12.713  -1.726  -2.996  1.00 34.73      A    C
ATOM    137  O   THR   77      12.969  -1.625  -1.790  1.00 34.99      A    O
ATOM    138  N   TYR   78      12.825  -2.869  -3.655  1.00 33.72      A    N
ATOM    139  CA  TYR   78      13.063  -4.087  -2.911  1.00 34.19      A    C
ATOM    140  CB  TYR   78      11.755  -4.904  -2.837  1.00 32.06      A    C
ATOM    141  CG  TYR   78      10.585  -4.090  -2.321  1.00 29.68      A    C
ATOM    142  CD1 TYR   78       9.907  -3.183  -3.152  1.00 29.12      A    C
ATOM    143  CE1 TYR   78       8.916  -2.317  -2.648  1.00 28.24      A    C
ATOM    144  CD2 TYR   78      10.183  -4.134  -0.967  1.00 28.00      A    C
ATOM    145  CE2 TYR   78       9.199  -3.289  -0.463  1.00 24.98      A    C
ATOM    146  CZ  TYR   78       8.577  -2.374  -1.307  1.00 28.24      A    C
ATOM    147  OH  TYR   78       7.659  -1.470  -0.810  1.00 31.65      A    O
ATOM    148  C   TYR   78      14.193  -4.873  -3.557  1.00 35.43      A    C
ATOM    149  O   TYR   78      14.278  -4.993  -4.780  1.00 37.75      A    O
ATOM    150  N   VAL   79      15.094  -5.377  -2.731  1.00 36.65      A    N
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ATOM    151  CA  VAL    79      16.068  -6.347  -3.204  1.00 36.46      A    C
ATOM    152  CB  VAL    79      17.358  -6.304  -2.395  1.00 37.20      A    C
ATOM    153  CG1 VAL    79      18.349  -7.295  -2.972  1.00 37.26      A    C
ATOM    154  CG2 VAL    79      17.924  -4.895  -2.383  1.00 38.46      A    C
ATOM    155  C   VAL    79      15.469  -7.719  -3.001  1.00 38.67      A    C
ATOM    156  O   VAL    79      15.494  -8.246  -1.884  1.00 35.22      A    O
ATOM    157  N   VAL    80      14.915  -8.297  -4.063  1.00 41.04      A    N
ATOM    158  CA  VAL    80      14.581  -9.717  -4.028  1.00 43.11      A    C
ATOM    159  CB  VAL    80      13.775 -10.146  -5.256  1.00 44.56      A    C
ATOM    160  CG1 VAL    80      13.627 -11.649  -5.251  1.00 47.28      A    C
ATOM    161  CG2 VAL    80      12.413  -9.483  -5.257  1.00 47.02      A    C
ATOM    162  C   VAL    80      15.878 -10.520  -4.016  1.00 46.29      A    C
ATOM    163  O   VAL    80      16.741 -10.342  -4.873  1.00 47.03      A    O
ATOM    164  N   VAL    81      16.025 -11.391  -3.034  1.00 49.18      A    N
ATOM    165  CA  VAL    81      17.173 -12.267  -2.967  1.00 52.16      A    C
ATOM    166  CB  VAL    81      17.789 -12.222  -1.565  1.00 51.26      A    C
ATOM    167  CG1 VAL    81      19.027 -13.107  -1.501  1.00 50.81      A    C
ATOM    168  CG2 VAL    81      18.108 -10.791  -1.202  1.00 52.80      A    C
ATOM    169  C   VAL    81      16.687 -13.676  -3.260  1.00 58.30      A    C
ATOM    170  O   VAL    81      15.652 -14.112  -2.732  1.00 58.40      A    O
ATOM    171  N   LEU    82      17.419 -14.393  -4.105  1.00 62.94      A    N
ATOM    172  CA  LEU    82      16.997 -15.734  -4.454  1.00 67.59      A    C
ATOM    173  CB  LEU    82      17.176 -15.949  -5.944  1.00 64.19      A    C
ATOM    174  CG  LEU    82      16.407 -14.837  -6.666  1.00 61.66      A    C
ATOM    175  CD1 LEU    82      16.570 -14.951  -8.164  1.00 60.74      A    C
ATOM    176  CD2 LEU    82      14.938 -14.911  -6.290  1.00 62.60      A    C
ATOM    177  C   LEU    82      17.778 -16.752  -3.648  1.00 73.85      A    C
ATOM    178  O   LEU    82      18.800 -16.419  -3.042  1.00 72.57      A    O
ATOM    179  N   LYS    83      17.268 -17.977  -3.596  1.00 82.70      A    N
ATOM    180  CA  LYS    83      17.995 -19.055  -2.955  1.00 91.24      A    C
ATOM    181  CB  LYS    83      17.184 -20.350  -3.050  1.00 92.11      A    C
ATOM    182  CG  LYS    83      17.946 -21.613  -2.649  1.00 95.32      A    C
ATOM    183  CD  LYS    83      18.130 -21.757  -1.140  1.00 96.21      A    C
ATOM    184  CE  LYS    83      18.758 -23.120  -0.816  1.00 96.12      A    C
ATOM    185  NZ  LYS    83      18.707 -23.483   0.629  1.00 99.11      A    N
ATOM    186  C   LYS    83      19.320 -19.163  -3.694  1.00 95.80      A    C
ATOM    187  O   LYS    83      19.366 -19.052  -4.919  1.00 98.45      A    O
ATOM    188  N   GLU    84      20.399 -19.348  -2.945  1.00100.77      A    N
ATOM    189  CA  GLU    84      21.731 -19.311  -3.532  1.00106.04      A    C
ATOM    190  CB  GLU    84      22.793 -19.394  -2.441  1.00108.26      A    C
ATOM    191  CG  GLU    84      23.164 -20.797  -2.048  1.00112.62      A    C
ATOM    192  CD  GLU    84      24.181 -20.801  -0.937  1.00116.07      A    C
ATOM    193  OE1 GLU    84      25.398 -20.803  -1.237  1.00119.19      A    O
ATOM    194  OE2 GLU    84      23.763 -20.784   0.241  1.00118.28      A    O
ATOM    195  C   GLU    84      21.899 -20.459  -4.512  1.00109.04      A    C
ATOM    196  O   GLU    84      21.010 -21.299  -4.639  1.00108.23      A    O
ATOM    197  N   GLU    85      23.031 -20.490  -5.208  1.00113.81      A    N
ATOM    198  CA  GLU    85      23.242 -21.474  -6.261  1.00118.74      A    C
ATOM    199  CB  GLU    85      23.060 -22.890  -5.704  1.00119.63      A    C
ATOM    200  CG  GLU    85      24.229 -23.390  -4.870  1.00122.20      A    C
ATOM    201  CD  GLU    85      24.788 -24.704  -5.390  1.00123.94      A    C
ATOM    202  OE1 GLU    85      26.009 -24.936  -5.246  1.00124.52      A    O
ATOM    203  OE2 GLU    85      24.011 -25.512  -5.947  1.00125.46      A    O
ATOM    204  C   GLU    85      22.292 -21.252  -7.441  1.00120.43      A    C
ATOM    205  O   GLU    85      22.400 -21.919  -8.470  1.00122.77      A    O
ATOM    206  N   THR    86      21.364 -20.316  -7.290  1.00120.31      A    N
ATOM    207  CA  THR    86      20.463 -19.968  -8.373  1.00119.91      A    C
ATOM    208  CB  THR    86      19.357 -19.023  -7.869  1.00117.92      A    C
ATOM    209  OG1 THR    86      18.543 -19.715  -6.917  1.00115.24      A    O
ATOM    210  CG2 THR    86      18.483 -18.543  -9.021  1.00115.66      A    C
ATOM    211  C   THR    86      21.208 -19.325  -9.541  1.00121.48      A    C
ATOM    212  O   THR    86      22.160 -18.573  -9.353  1.00122.30      A    O
ATOM    213  N   HIS    87      20.764 -19.646 -10.752  1.00123.45      A    N
ATOM    214  CA  HIS    87      21.418 -19.198 -11.980  1.00124.91      A    C
ATOM    215  CB  HIS    87      21.213 -20.227 -13.090  1.00127.94      A    C
ATOM    216  CG  HIS    87      22.040 -21.453 -12.904  1.00131.80      A    C
ATOM    217  CD2 HIS    87      22.930 -21.773 -11.937  1.00133.11      A    C
ATOM    218  ND1 HIS    87      22.017 -22.507 -13.783  1.00133.19      A    N
ATOM    219  CE1 HIS    87      22.867 -23.433 -13.366  1.00134.19      A    C
ATOM    220  NE2 HIS    87      23.431 -23.012 -12.252  1.00134.17      A    N
ATOM    221  C   HIS    87      20.986 -17.836 -12.473  1.00123.89      A    C
ATOM    222  O   HIS    87      19.822 -17.466 -12.361  1.00123.47      A    O
ATOM    223  N   LEU    88      21.939 -17.106 -13.045  1.00123.03      A    N
ATOM    224  CA  LEU    88      21.688 -15.773 -13.574  1.00122.10      A    C
ATOM    225  CB  LEU    88      22.979 -15.195 -14.162  1.00124.68      A    C
ATOM    226  CG  LEU    88      24.215 -15.377 -13.273  1.00126.86      A    C
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ATOM    227  CD1 LEU    88      25.432 -14.711 -13.909  1.00127.21      A    C
ATOM    228  CD2 LEU    88      23.935 -14.794 -11.890  1.00128.06      A    C
ATOM    229  C   LEU    88      20.603 -15.835 -14.641  1.00119.59      A    C
ATOM    230  O   LEU    88      19.887 -14.861 -14.882  1.00118.95      A    O
ATOM    231  N   SER    89      20.495 -16.992 -15.282  1.00117.17      A    N
ATOM    232  CA  SER    89      19.381 -17.268 -16.174  1.00114.74      A    C
ATOM    233  CB  SER    89      19.550 -18.648 -16.814  1.00115.37      A    C
ATOM    234  OG  SER    89      19.719 -19.653 -15.825  1.00116.88      A    O
ATOM    235  C   SER    89      18.111 -17.236 -15.341  1.00112.77      A    C
ATOM    236  O   SER    89      17.099 -16.668 -15.752  1.00111.49      A    O
ATOM    237  N   GLN    90      18.185 -17.840 -14.158  1.00110.68      A    N
ATOM    238  CA  GLN    90      17.033 -17.967 -13.279  1.00108.49      A    C
ATOM    239  CB  GLN    90      17.300 -19.042 -12.223  1.00108.59      A    C
ATOM    240  CG  GLN    90      17.416 -20.449 -12.811  1.00109.07      A    C
ATOM    241  CD  GLN    90      17.691 -21.518 -11.764  1.00109.15      A    C
ATOM    242  OE1 GLN    90      18.790 -21.596 -11.212  1.00109.15      A    O
ATOM    243  NE2 GLN    90      16.693 -22.353 -11.491  1.00108.63      A    N
ATOM    244  C   GLN    90      16.680 -16.642 -12.611  1.00107.20      A    C
ATOM    245  O   GLN    90      15.513 -16.250 -12.589  1.00106.82      A    O
ATOM    246  N   SER    91      17.683 -15.949 -12.078  1.00105.29      A    N
ATOM    247  CA  SER    91      17.472 -14.595 -11.569  1.00103.51      A    C
ATOM    248  CB  SER    91      18.816 -13.871 -11.370  1.00102.29      A    C
ATOM    249  OG  SER    91      19.158 -13.724 -10.000  1.00 98.21      A    O
ATOM    250  C   SER    91      16.630 -13.833 -12.588  1.00103.23      A    C
ATOM    251  O   SER    91      15.618 -13.227 -12.248  1.00102.98      A    O
ATOM    252  N   GLU    92      17.045 -13.889 -13.847  1.00103.82      A    N
ATOM    253  CA  GLU    92      16.451 -13.064 -14.884  1.00104.85      A    C
ATOM    254  CB  GLU    92      17.181 -13.299 -16.211  1.00106.74      A    C
ATOM    255  CG  GLU    92      16.427 -12.816 -17.447  1.00111.04      A    C
ATOM    256  CD  GLU    92      15.480 -13.870 -18.016  1.00112.76      A    C
ATOM    257  OE1 GLU    92      14.269 -13.583 -18.143  1.00114.41      A    O
ATOM    258  OE2 GLU    92      15.948 -14.985 -18.336  1.00114.56      A    O
ATOM    259  C   GLU    92      14.953 -13.302 -15.055  1.00104.14      A    C
ATOM    260  O   GLU    92      14.180 -12.350 -15.106  1.00104.75      A    O
ATOM    261  N   ARG    93      14.540 -14.566 -15.137  1.00103.50      A    N
ATOM    262  CA  ARG    93      13.145 -14.899 -15.445  1.00101.47      A    C
ATOM    263  CB  ARG    93      13.025 -16.375 -15.844  1.00106.48      A    C
ATOM    264  CG  ARG    93      13.405 -16.665 -17.298  1.00113.16      A    C
ATOM    265  CD  ARG    93      13.327 -18.161 -17.623  1.00120.42      A    C
ATOM    266  NE  ARG    93      14.627 -18.826 -17.516  1.00128.11      A    N
ATOM    267  CZ  ARG    93      14.826 -19.991 -16.906  1.00131.80      A    C
ATOM    268  NH1 ARG    93      16.044 -20.518 -16.858  1.00134.30      A    N
ATOM    269  NH2 ARG    93      13.807 -20.629 -16.345  1.00134.64      A    N
ATOM    270  C   ARG    93      12.196 -14.600 -14.286  1.00 96.81      A    C
ATOM    271  O   ARG    93      11.139 -13.990 -14.472  1.00 95.99      A    O
ATOM    272  N   THR    94      12.577 -15.028 -13.089  1.00 91.16      A    N
ATOM    273  CA  THR    94      11.852 -14.643 -11.890  1.00 86.23      A    C
ATOM    274  CB  THR    94      12.723 -14.824 -10.640  1.00 83.21      A    C
ATOM    275  OG1 THR    94      13.153 -16.185 -10.554  1.00 80.97      A    O
ATOM    276  CG2 THR    94      11.949 -14.461  -9.388  1.00 80.14      A    C
ATOM    277  C   THR    94      11.478 -13.171 -12.016  1.00 85.96      A    C
ATOM    278  O   THR    94      10.414 -12.742 -11.577  1.00 85.37      A    O
ATOM    279  N   ALA    95      12.361 -12.404 -12.641  1.00 85.71      A    N
ATOM    280  CA  ALA    95      12.224 -10.960 -12.685  1.00 87.24      A    C
ATOM    281  CB  ALA    95      13.581 -10.329 -12.931  1.00 85.86      A    C
ATOM    282  C   ALA    95      11.239 -10.515 -13.758  1.00 88.89      A    C
ATOM    283  O   ALA    95      10.460  -9.577 -13.554  1.00 88.87      A    O
ATOM    284  N   ARG    96      11.282 -11.178 -14.909  1.00 91.47      A    N
ATOM    285  CA  ARG    96      10.322 -10.896 -15.967  1.00 93.56      A    C
ATOM    286  CB  ARG    96      10.772 -11.535 -17.286  1.00 97.53      A    C
ATOM    287  CG  ARG    96      12.113 -11.029 -17.803  1.00102.81      A    C
ATOM    288  CD  ARG    96      12.042  -9.567 -18.230  1.00108.59      A    C
ATOM    289  NE  ARG    96      13.359  -9.039 -18.581  1.00114.78      A    N
ATOM    290  CZ  ARG    96      13.603  -7.767 -18.876  1.00118.68      A    C
ATOM    291  NH1 ARG    96      14.833  -7.380 -19.182  1.00121.30      A    N
ATOM    292  NH2 ARG    96      12.617  -6.880 -18.864  1.00121.58      A    N
ATOM    293  C   ARG    96       8.985 -11.477 -15.528  1.00 92.22      A    C
ATOM    294  O   ARG    96       7.922 -10.918 -15.818  1.00 91.98      A    O
ATOM    295  N   ARG    97       9.058 -12.595 -14.807  1.00 89.71      A    N
ATOM    296  CA  ARG    97       7.876 -13.237 -14.245  1.00 87.42      A    C
ATOM    297  CB  ARG    97       8.281 -14.483 -13.453  1.00 90.04      A    C
ATOM    298  CG  ARG    97       7.103 -15.307 -12.940  1.00 94.32      A    C
ATOM    299  CD  ARG    97       7.554 -16.678 -12.440  1.00 98.95      A    C
ATOM    300  NE  ARG    97       6.539 -17.704 -12.666  1.00104.16      A    N
ATOM    301  CZ  ARG    97       6.496 -18.489 -13.739  1.00107.61      A    C
ATOM    302  NH1 ARG    97       5.533 -19.394 -13.860  1.00110.25      A    N
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ATOM    303  NH2 ARG    97       7.415 -18.372 -14.690  1.00109.39      A    N
ATOM    304  C   ARG    97       7.128 -12.271 -13.334  1.00 83.61      A    C
ATOM    305  O   ARG    97       5.972 -11.936 -13.582  1.00 83.78      A    O
ATOM    306  N   LEU    98       7.799 -11.822 -12.279  1.00 78.62      A    N
ATOM    307  CA  LEU    98       7.213 -10.848 -11.378  1.00 73.43      A    C
ATOM    308  CB  LEU    98       8.281 -10.279 -10.446  1.00 72.56      A    C
ATOM    309  CG  LEU    98       8.084  -8.825 -10.006  1.00 71.98      A    C
ATOM    310  CD1 LEU    98       6.792  -8.673  -9.218  1.00 70.37      A    C
ATOM    311  CD2 LEU    98       9.282  -8.400  -9.171  1.00 71.13      A    C
ATOM    312  C   LEU    98       6.592  -9.729 -12.184  1.00 70.64      A    C
ATOM    313  O   LEU    98       5.426  -9.397 -12.011  1.00 69.36      A    O
ATOM    314  N   GLN    99       7.376  -9.152 -13.080  1.00 69.00      A    N
ATOM    315  CA  GLN    99       6.895  -8.026 -13.861  1.00 67.29      A    C
ATOM    316  CB  GLN    99       7.986  -7.537 -14.808  1.00 67.31      A    C
ATOM    317  CG  GLN    99       7.697  -6.182 -15.420  1.00 66.57      A    C
ATOM    318  CD  GLN    99       8.960  -5.387 -15.623  1.00 66.92      A    C
ATOM    319  OE1 GLN    99       8.930  -4.238 -16.068  1.00 67.28      A    O
ATOM    320  NE2 GLN    99      10.092  -6.001 -15.294  1.00 66.83      A    N
ATOM    321  C   GLN    99       5.671  -8.450 -14.660  1.00 65.61      A    C
ATOM    322  O   GLN    99       4.781  -7.641 -14.931  1.00 64.48      A    O
ATOM    323  N   ALA   100       5.645  -9.732 -15.024  1.00 64.28      A    N
ATOM    324  CA  ALA   100       4.546 -10.316 -15.793  1.00 62.89      A    C
ATOM    325  CB  ALA   100       4.904 -11.749 -16.201  1.00 61.93      A    C
ATOM    326  C   ALA   100       3.248 -10.309 -14.980  1.00 62.26      A    C
ATOM    327  O   ALA   100       2.250  -9.671 -15.364  1.00 60.92      A    O
ATOM    328  N   GLN   101       3.271 -11.017 -13.856  1.00 59.83      A    N
ATOM    329  CA  GLN   101       2.189 -10.931 -12.897  1.00 58.75      A    C
ATOM    330  CB  GLN   101       2.619 -11.603 -11.610  1.00 56.30      A    C
ATOM    331  CG  GLN   101       3.498 -12.803 -11.852  1.00 55.38      A    C
ATOM    332  CD  GLN   101       3.346 -13.837 -10.770  1.00 55.44      A    C
ATOM    333  OE1 GLN   101       2.402 -13.785  -9.989  1.00 57.12      A    O
ATOM    334  NE2 GLN   101       4.275 -14.787 -10.712  1.00 55.95      A    N
ATOM    335  C   GLN   101       1.888  -9.457 -12.638  1.00 59.50      A    C
ATOM    336  O   GLN   101       0.918  -8.904 -13.158  1.00 60.05      A    O
ATOM    337  N   ALA   102       2.745  -8.826 -11.843  1.00 59.21      A    N
ATOM    338  CA  ALA   102       2.649  -7.403 -11.557  1.00 59.10      A    C
ATOM    339  CB  ALA   102       4.030  -6.840 -11.318  1.00 56.43      A    C
ATOM    340  C   ALA   102       1.974  -6.634 -12.681  1.00 60.79      A    C
ATOM    341  O   ALA   102       1.054  -5.848 -12.447  1.00 60.89      A    O
ATOM    342  N   ALA   103       2.440  -6.857 -13.904  1.00 63.30      A    N
ATOM    343  CA  ALA   103       1.897  -6.143 -15.052  1.00 64.47      A    C
ATOM    344  CB  ALA   103       2.489  -6.684 -16.347  1.00 65.31      A    C
ATOM    345  C   ALA   103       0.392  -6.315 -15.061  1.00 64.88      A    C
ATOM    346  O   ALA   103      -0.346  -5.346 -15.236  1.00 64.54      A    O
ATOM    347  N   ARG   104      -0.052  -7.554 -14.848  1.00 65.14      A    N
ATOM    348  CA  ARG   104      -1.456  -7.918 -15.003  1.00 65.17      A    C
ATOM    349  CB  ARG   104      -1.598  -9.440 -15.097  1.00 63.37      A    C
ATOM    350  CG  ARG   104      -1.198  -9.991 -16.454  1.00 62.23      A    C
ATOM    351  CD  ARG   104      -1.540 -11.459 -16.593  1.00 61.80      A    C
ATOM    352  NE  ARG   104      -0.642 -12.339 -15.846  1.00 61.29      A    N
ATOM    353  CZ  ARG   104       0.397 -12.968 -16.387  1.00 61.76      A    C
ATOM    354  NH1 ARG   104       1.164 -13.761 -15.644  1.00 61.55      A    N
ATOM    355  NH2 ARG   104       0.675 -12.794 -17.674  1.00 61.90      A    N
ATOM    356  C   ARG   104      -2.373  -7.381 -13.904  1.00 66.10      A    C
ATOM    357  O   ARG   104      -3.469  -6.886 -14.195  1.00 65.62      A    O
ATOM    358  N   ARG   105      -1.935  -7.473 -12.650  1.00 66.65      A    N
ATOM    359  CA  ARG   105      -2.724  -6.935 -11.546  1.00 66.20      A    C
ATOM    360  CB  ARG   105      -2.048  -7.221 -10.211  1.00 64.90      A    C
ATOM    361  CG  ARG   105      -2.350  -8.581  -9.638  1.00 65.02      A    C
ATOM    362  CD  ARG   105      -1.519  -9.681 -10.267  1.00 66.10      A    C
ATOM    363  NE  ARG   105      -1.460 -10.832  -9.365  1.00 70.31      A    N
ATOM    364  CZ  ARG   105      -1.306 -12.102  -9.742  1.00 72.23      A    C
ATOM    365  NH1 ARG   105      -1.267 -13.060  -8.821  1.00 73.45      A    N
ATOM    366  NH2 ARG   105      -1.191 -12.421 -11.028  1.00 73.04      A    N
ATOM    367  C   ARG   105      -2.925  -5.437 -11.703  1.00 66.79      A    C
ATOM    368  O   ARG   105      -3.706  -4.833 -10.979  1.00 67.02      A    O
ATOM    369  N   GLY   106      -2.212  -4.836 -12.650  1.00 69.01      A    N
ATOM    370  CA  GLY   106      -2.379  -3.415 -12.913  1.00 72.19      A    C
ATOM    371  C   GLY   106      -1.244  -2.580 -12.353  1.00 73.50      A    C
ATOM    372  O   GLY   106      -1.375  -1.367 -12.157  1.00 73.14      A    O
ATOM    373  N   TYR   107      -0.126  -3.245 -12.086  1.00 75.51      A    N
ATOM    374  CA  TYR   107       1.040  -2.590 -11.525  1.00 78.05      A    C
ATOM    375  CB  TYR   107       1.454  -3.285 -10.235  1.00 77.61      A    C
ATOM    376  CG  TYR   107       0.475  -3.021  -9.137  1.00 77.39      A    C
ATOM    377  CD1 TYR   107       0.173  -1.725  -8.766  1.00 77.40      A    C
ATOM    378  CE1 TYR   107      -0.771  -1.464  -7.808  1.00 78.07      A    C
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ATOM    379  CD2 TYR   107      -0.195  -4.058  -8.512  1.00 78.22      A    C
ATOM    380  CE2 TYR   107      -1.147  -3.812  -7.550  1.00 77.52      A    C
ATOM    381  CZ  TYR   107      -1.432  -2.512  -7.203  1.00 78.47      A    C
ATOM    382  OH  TYR   107      -2.392  -2.253  -6.255  1.00 78.73      A    O
ATOM    383  C   TYR   107       2.214  -2.548 -12.485  1.00 80.62      A    C
ATOM    384  O   TYR   107       2.787  -3.583 -12.849  1.00 79.63      A    O
ATOM    385  N   LEU   108       2.565  -1.332 -12.889  1.00 83.48      A    N
ATOM    386  CA  LEU   108       3.802  -1.095 -13.610  1.00 84.85      A    C
ATOM    387  CB  LEU   108       3.848   0.358 -14.084  1.00 86.63      A    C
ATOM    388  CG  LEU   108       4.652   0.694 -15.342  1.00 88.85      A    C
ATOM    389  CD1 LEU   108       4.615   2.204 -15.564  1.00 89.67      A    C
ATOM    390  CD2 LEU   108       6.082   0.210 -15.194  1.00 89.84      A    C
ATOM    391  C   LEU   108       4.937  -1.370 -12.624  1.00 84.33      A    C
ATOM    392  O   LEU   108       4.827  -1.060 -11.440  1.00 85.33      A    O
ATOM    393  N   THR   109       6.018  -1.964 -13.103  1.00 82.38      A    N
ATOM    394  CA  THR   109       7.155  -2.227 -12.245  1.00 82.68      A    C
ATOM    395  CB  THR   109       7.104  -3.653 -11.700  1.00 84.37      A    C
ATOM    396  OG1 THR   109       7.043  -4.581 -12.789  1.00 86.52      A    O
ATOM    397  CG2 THR   109       5.897  -3.823 -10.830  1.00 85.93      A    C
ATOM    398  C   THR   109       8.461  -2.033 -13.000  1.00 81.95      A    C
ATOM    399  O   THR   109       8.508  -2.201 -14.222  1.00 79.46      A    O
ATOM    400  N   LYS   110       9.521  -1.676 -12.275  1.00 81.51      A    N
ATOM    401  CA  LYS   110      10.832  -1.569 -12.890  1.00 81.24      A    C
ATOM    402  CB  LYS   110      11.340  -0.129 -12.852  1.00 83.45      A    C
ATOM    403  CG  LYS   110      12.617   0.074 -13.662  1.00 88.37      A    C
ATOM    404  CD  LYS   110      13.088   1.523 -13.651  1.00 92.43      A    C
ATOM    405  CE  LYS   110      12.099   2.444 -14.332  1.00 95.98      A    C
ATOM    406  NZ  LYS   110      12.518   3.867 -14.197  1.00100.67      A    N
ATOM    407  C   LYS   110      11.854  -2.475 -12.241  1.00 79.14      A    C
ATOM    408  O   LYS   110      11.905  -2.610 -11.022  1.00 79.79      A    O
ATOM    409  N   ILE   111      12.666  -3.107 -13.076  1.00 75.80      A    N
ATOM    410  CA  ILE   111      13.853  -3.785 -12.600  1.00 72.25      A    C
ATOM    411  CB  ILE   111      14.150  -5.029 -13.430  1.00 71.02      A    C
ATOM    412  CG2 ILE   111      15.397  -5.711 -12.898  1.00 69.49      A    C
ATOM    413  CG1 ILE   111      12.952  -5.978 -13.391  1.00 69.43      A    C
ATOM    414  CD1 ILE   111      12.768  -6.686 -12.071  1.00 67.40      A    C
ATOM    415  C   ILE   111      15.024  -2.818 -12.738  1.00 71.50      A    C
ATOM    416  O   ILE   111      15.347  -2.371 -13.841  1.00 71.60      A    O
ATOM    417  N   LEU   112      15.655  -2.494 -11.615  1.00 69.75      A    N
ATOM    418  CA  LEU   112      16.715  -1.496 -11.598  1.00 67.25      A    C
ATOM    419  CB  LEU   112      16.689  -0.726 -10.279  1.00 65.97      A    C
ATOM    420  CG  LEU   112      15.329  -0.103  -9.976  1.00 66.90      A    C
ATOM    421  CD1 LEU   112      15.357   0.600  -8.627  1.00 67.88      A    C
ATOM    422  CD2 LEU   112      14.962   0.850 -11.092  1.00 65.29      A    C
ATOM    423  C   LEU   112      18.069  -2.166 -11.778  1.00 66.52      A    C
ATOM    424  O   LEU   112      18.996  -1.589 -12.355  1.00 65.11      A    O
ATOM    425  N   HIS   113      18.184  -3.387 -11.278  1.00 65.05      A    N
ATOM    426  CA  HIS   113      19.458  -4.064 -11.327  1.00 66.25      A    C
ATOM    427  CB  HIS   113      20.428  -3.433 -10.330  1.00 65.11      A    C
ATOM    428  CG  HIS   113      21.807  -4.010 -10.387  1.00 63.95      A    C
ATOM    429  CD2 HIS   113      22.500  -4.757  -9.495  1.00 63.35      A    C
ATOM    430  ND1 HIS   113      22.638  -3.841 -11.473  1.00 63.07      A    N
ATOM    431  CE1 HIS   113      23.783  -4.459 -11.248  1.00 63.01      A    C
ATOM    432  NE2 HIS   113      23.725  -5.023 -10.056  1.00 63.38      A    N
ATOM    433  C   HIS   113      19.321  -5.543 -11.035  1.00 67.36      A    C
ATOM    434  O   HIS   113      18.547  -5.953 -10.176  1.00 67.90      A    O
ATOM    435  N   VAL   114      20.087  -6.341 -11.760  1.00 68.11      A    N
ATOM    436  CA  VAL   114      20.031  -7.774 -11.611  1.00 69.21      A    C
ATOM    437  CB  VAL   114      19.688  -8.443 -12.955  1.00 68.54      A    C
ATOM    438  CG1 VAL   114      19.579  -9.949 -12.775  1.00 67.55      A    C
ATOM    439  CG2 VAL   114      18.388  -7.861 -13.507  1.00 64.17      A    C
ATOM    440  C   VAL   114      21.387  -8.244 -11.129  1.00 71.04      A    C
ATOM    441  O   VAL   114      22.392  -8.048 -11.804  1.00 71.37      A    O
ATOM    442  N   PHE   115      21.415  -8.852  -9.953  1.00 73.34      A    N
ATOM    443  CA  PHE   115      22.674  -9.255  -9.353  1.00 76.69      A    C
ATOM    444  CB  PHE   115      22.500  -9.484  -7.856  1.00 77.67      A    C
ATOM    445  CG  PHE   115      22.268  -8.233  -7.087  1.00 79.20      A    C
ATOM    446  CD1 PHE   115      20.986  -7.852  -6.737  1.00 79.95      A    C
ATOM    447  CD2 PHE   115      23.330  -7.423  -6.734  1.00 79.39      A    C
ATOM    448  CE1 PHE   115      20.766  -6.686  -6.052  1.00 81.16      A    C
ATOM    449  CE2 PHE   115      23.120  -6.250  -6.046  1.00 80.76      A    C
ATOM    450  CZ  PHE   115      21.838  -5.880  -5.704  1.00 82.11      A    C
ATOM    451  C   PHE   115      23.217 -10.518  -9.981  1.00 78.95      A    C
ATOM    452  O   PHE   115      22.708 -11.618  -9.739  1.00 79.39      A    O
ATOM    453  N   HIS   116      24.257 -10.364 -10.791  1.00 81.04      A    N
ATOM    454  CA  HIS   116      25.087 -11.504 -11.131  1.00 82.56      A    C
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ATOM    455  CB  HIS   116      25.073 -11.768 -12.647  1.00 86.34      A    C
ATOM    456  CG  HIS   116      25.224 -10.544 -13.498  1.00 89.89      A    C
ATOM    457  CD2 HIS   116      26.095 -10.260 -14.496  1.00 91.04      A    C
ATOM    458  ND1 HIS   116      24.360  -9.472 -13.428  1.00 91.27      A    N
ATOM    459  CE1 HIS   116      24.689  -8.583 -14.349  1.00 92.06      A    C
ATOM    460  NE2 HIS   116      25.737  -9.038 -15.011  1.00 91.87      A    N
ATOM    461  C   HIS   116      26.510 -11.314 -10.621  1.00 80.27      A    C
ATOM    462  O   HIS   116      27.413 -10.946 -11.370  1.00 80.70      A    O
ATOM    463  N   GLY   117      26.696 -11.572  -9.330  1.00 76.62      A    N
ATOM    464  CA  GLY   117      27.997 -11.369  -8.729  1.00 72.53      A    C
ATOM    465  C   GLY   117      28.215 -12.075  -7.406  1.00 69.71      A    C
ATOM    466  O   GLY   117      28.740 -13.186  -7.363  1.00 68.94      A    O
ATOM    467  N   LEU   118      27.834 -11.437  -6.310  1.00 67.10      A    N
ATOM    468  CA  LEU   118      28.133 -12.025  -5.019  1.00 65.67      A    C
ATOM    469  CB  LEU   118      28.931 -11.040  -4.154  1.00 64.83      A    C
ATOM    470  CG  LEU   118      28.219  -9.904  -3.427  1.00 62.63      A    C
ATOM    471  CD1 LEU   118      29.171  -9.337  -2.418  1.00 61.32      A    C
ATOM    472  CD2 LEU   118      27.746  -8.834  -4.398  1.00 62.31      A    C
ATOM    473  C   LEU   118      26.845 -12.441  -4.333  1.00 64.76      A    C
ATOM    474  O   LEU   118      26.839 -12.867  -3.180  1.00 65.29      A    O
ATOM    475  N   LEU   119      25.749 -12.334  -5.071  1.00 63.71      A    N
ATOM    476  CA  LEU   119      24.451 -12.710  -4.548  1.00 62.88      A    C
ATOM    477  CB  LEU   119      23.998 -11.653  -3.549  1.00 65.56      A    C
ATOM    478  CG  LEU   119      22.666 -11.858  -2.840  1.00 66.68      A    C
ATOM    479  CD1 LEU   119      22.840 -12.943  -1.799  1.00 68.24      A    C
ATOM    480  CD2 LEU   119      22.226 -10.553  -2.188  1.00 67.19      A    C
ATOM    481  C   LEU   119      23.424 -12.846  -5.682  1.00 61.76      A    C
ATOM    482  O   LEU   119      23.265 -11.942  -6.505  1.00 61.17      A    O
ATOM    483  N   PRO   120      22.717 -13.988  -5.739  1.00 60.22      A    N
ATOM    484  CD  PRO   120      22.785 -15.117  -4.795  1.00 59.04      A    C
ATOM    485  CA  PRO   120      21.706 -14.209  -6.774  1.00 58.33      A    C
ATOM    486  CB  PRO   120      21.360 -15.677  -6.621  1.00 57.41      A    C
ATOM    487  CG  PRO   120      21.598 -15.948  -5.181  1.00 58.24      A    C
ATOM    488  C   PRO   120      20.513 -13.336  -6.472  1.00 58.32      A    C
ATOM    489  O   PRO   120      20.147 -13.197  -5.301  1.00 60.08      A    O
ATOM    490  N   GLY   121      19.906 -12.754  -7.507  1.00 55.72      A    N
ATOM    491  CA  GLY   121      18.684 -11.998  -7.301  1.00 51.86      A    C
ATOM    492  C   GLY   121      18.687 -10.663  -8.012  1.00 51.21      A    C
ATOM    493  O   GLY   121      19.580 -10.378  -8.803  1.00 51.96      A    O
ATOM    494  N   PHE   122      17.689  -9.833  -7.737  1.00 49.58      A    N
ATOM    495  CA  PHE   122      17.612  -8.536  -8.383  1.00 47.46      A    C
ATOM    496  CB  PHE   122      16.813  -8.664  -9.676  1.00 45.66      A    C
ATOM    497  CG  PHE   122      15.418  -9.178  -9.473  1.00 44.33      A    C
ATOM    498  CD1 PHE   122      14.341  -8.307  -9.473  1.00 42.51      A    C
ATOM    499  CD2 PHE   122      15.182 -10.536  -9.268  1.00 41.45      A    C
ATOM    500  CE1 PHE   122      13.056  -8.787  -9.273  1.00 42.67      A    C
ATOM    501  CE2 PHE   122      13.906 -11.013  -9.070  1.00 37.88      A    C
ATOM    502  CZ  PHE   122      12.843 -10.143  -9.071  1.00 38.44      A    C
ATOM    503  C   PHE   122      16.990  -7.463  -7.486  1.00 47.82      A    C
ATOM    504  O   PHE   122      16.384  -7.773  -6.455  1.00 46.93      A    O
ATOM    505  N   LEU   123      17.160  -6.201  -7.882  1.00 48.30      A    N
ATOM    506  CA  LEU   123      16.489  -5.073  -7.229  1.00 49.55      A    C
ATOM    507  CB  LEU   123      17.468  -3.902  -6.993  1.00 50.43      A    C
ATOM    508  CG  LEU   123      16.892  -2.637  -6.317  1.00 50.76      A    C
ATOM    509  CD1 LEU   123      16.958  -2.807  -4.803  1.00 50.11      A    C
ATOM    510  CD2 LEU   123      17.666  -1.383  -6.744  1.00 47.52      A    C
ATOM    511  C   LEU   123      15.342  -4.592  -8.109  1.00 49.64      A    C
ATOM    512  O   LEU   123      15.496  -4.450  -9.326  1.00 49.87      A    O
ATOM    513  N   VAL   124      14.199  -4.331  -7.483  1.00 50.02      A    N
ATOM    514  CA  VAL   124      12.982  -3.987  -8.203  1.00 49.18      A    C
ATOM    515  CB  VAL   124      11.981  -5.159  -8.182  1.00 47.70      A    C
ATOM    516  CG1 VAL   124      11.675  -5.567  -6.728  1.00 43.41      A    C
ATOM    517  CG2 VAL   124      10.692  -4.746  -8.896  1.00 46.32      A    C
ATOM    518  C   VAL   124      12.298  -2.774  -7.587  1.00 50.07      A    C
ATOM    519  O   VAL   124      12.255  -2.628  -6.362  1.00 49.64      A    O
ATOM    520  N   LYS   125      11.751  -1.921  -8.447  1.00 50.54      A    N
ATOM    521  CA  LYS   125      10.944  -0.785  -8.021  1.00 51.53      A    C
ATOM    522  CB  LYS   125      11.382   0.467  -8.796  1.00 53.26      A    C
ATOM    523  CG  LYS   125      10.786   1.778  -8.315  1.00 55.05      A    C
ATOM    524  CD  LYS   125      11.670   2.951  -8.741  1.00 58.38      A    C
ATOM    525  CE  LYS   125      11.108   4.289  -8.255  1.00 60.15      A    C
ATOM    526  NZ  LYS   125      11.497   5.417  -9.155  1.00 61.63      A    N
ATOM    527  C   LYS   125       9.462  -1.088  -8.284  1.00 51.78      A    C
ATOM    528  O   LYS   125       8.991  -1.027  -9.426  1.00 52.65      A    O
ATOM    529  N   MET   126       8.733  -1.431  -7.225  1.00 51.29      A    N
ATOM    530  CA  MET   126       7.319  -1.765  -7.342  1.00 49.75      A    C
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ATOM    531  CB  MET   126       7.119  -3.285  -7.354  1.00 49.94      A    C
ATOM    532  CG  MET   126       7.627  -4.011  -6.116  1.00 51.30      A    C
ATOM    533  SD  MET   126       7.626  -5.837  -6.339  1.00 56.10      A    S
ATOM    534  CE  MET   126       7.973  -6.399  -4.675  1.00 54.16      A    C
ATOM    535  C   MET   126       6.565  -1.169  -6.172  1.00 49.16      A    C
ATOM    536  O   MET   126       7.180  -0.762  -5.185  1.00 47.47      A    O
ATOM    537  N   SER   127       5.236  -1.117  -6.287  1.00 48.54      A    N
ATOM    538  CA  SER   127       4.383  -0.842  -5.137  1.00 46.28      A    C
ATOM    539  CB  SER   127       2.917  -0.775  -5.537  1.00 47.48      A    C
ATOM    540  OG  SER   127       2.103  -0.803  -4.375  1.00 47.10      A    O
ATOM    541  C   SER   127       4.540  -1.934  -4.096  1.00 44.81      A    C
ATOM    542  O   SER   127       4.769  -3.094  -4.436  1.00 44.11      A    O
ATOM    543  N   GLY   128       4.416  -1.548  -2.828  1.00 42.54      A    N
ATOM    544  CA  GLY   128       4.503  -2.504  -1.748  1.00 39.84      A    C
ATOM    545  C   GLY   128       3.353  -3.484  -1.829  1.00 40.64      A    C
ATOM    546  O   GLY   128       3.475  -4.625  -1.378  1.00 40.33      A    O
ATOM    547  N   ASP   129       2.241  -3.050  -2.417  1.00 40.43      A    N
ATOM    548  CA  ASP   129       1.109  -3.932  -2.637  1.00 41.66      A    C
ATOM    549  CB  ASP   129       0.170  -3.337  -3.683  1.00 41.97      A    C
ATOM    550  CG  ASP   129      -0.675  -2.192  -3.133  1.00 45.41      A    C
ATOM    551  OD1 ASP   129      -0.446  -1.771  -1.978  1.00 48.87      A    O
ATOM    552  OD2 ASP   129      -1.577  -1.708  -3.853  1.00 45.68      A    O
ATOM    553  C   ASP   129       1.570  -5.311  -3.093  1.00 43.90      A    C
ATOM    554  O   ASP   129       0.985  -6.325  -2.704  1.00 46.09      A    O
ATOM    555  N   LEU   130       2.627  -5.360  -3.898  1.00 43.76      A    N
ATOM    556  CA  LEU   130       3.029  -6.610  -4.533  1.00 45.35      A    C
ATOM    557  CB  LEU   130       3.659  -6.327  -5.905  1.00 43.26      A    C
ATOM    558  CG  LEU   130       2.677  -5.821  -6.978  1.00 43.78      A    C
ATOM    559  CD1 LEU   130       3.369  -4.889  -7.958  1.00 42.09      A    C
ATOM    560  CD2 LEU   130       2.057  -7.012  -7.700  1.00 40.85      A    C
ATOM    561  C   LEU   130       3.985  -7.428  -3.676  1.00 48.24      A    C
ATOM    562  O   LEU   130       4.656  -8.344  -4.167  1.00 47.63      A    O
ATOM    563  N   LEU   131       4.054  -7.116  -2.390  1.00 52.01      A    N
ATOM    564  CA  LEU   131       4.981  -7.844  -1.541  1.00 56.99      A    C
ATOM    565  CB  LEU   131       5.274  -7.056  -0.269  1.00 55.21      A    C
ATOM    566  CG  LEU   131       6.139  -5.830  -0.544  1.00 53.21      A    C
ATOM    567  CD1 LEU   131       5.883  -4.777   0.502  1.00 51.08      A    C
ATOM    568  CD2 LEU   131       7.591  -6.244  -0.589  1.00 51.08      A    C
ATOM    569  C   LEU   131       4.442  -9.217  -1.199  1.00 61.74      A    C
ATOM    570  O   LEU   131       5.199 -10.188  -1.150  1.00 62.05      A    O
ATOM    571  N   GLU   132       3.133  -9.303  -0.969  1.00 67.01      A    N
ATOM    572  CA  GLU   132       2.494 -10.600  -0.757  1.00 70.97      A    C
ATOM    573  CB  GLU   132       0.973 -10.437  -0.698  1.00 76.59      A    C
ATOM    574  CG  GLU   132       0.198 -11.744  -0.504  1.00 85.24      A    C
ATOM    575  CD  GLU   132      -1.324 -11.542  -0.472  1.00 90.08      A    C
ATOM    576  OE1 GLU   132      -2.060 -12.555  -0.564  1.00 93.16      A    O
ATOM    577  OE2 GLU   132      -1.782 -10.376  -0.354  1.00 91.94      A    O
ATOM    578  C   GLU   132       2.870 -11.473  -1.946  1.00 71.12      A    C
ATOM    579  O   GLU   132       3.437 -12.563  -1.797  1.00 70.53      A    O
ATOM    580  N   LEU   133       2.574 -10.948  -3.133  1.00 70.73      A    N
ATOM    581  CA  LEU   133       2.831 -11.636  -4.390  1.00 70.60      A    C
ATOM    582  CB  LEU   133       2.546 -10.687  -5.554  1.00 67.75      A    C
ATOM    583  CG  LEU   133       1.958 -11.328  -6.807  1.00 66.81      A    C
ATOM    584  CD1 LEU   133       1.959 -10.320  -7.933  1.00 65.64      A    C
ATOM    585  CD2 LEU   133       2.765 -12.559  -7.190  1.00 66.81      A    C
ATOM    586  C   LEU   133       4.264 -12.162  -4.494  1.00 72.24      A    C
ATOM    587  O   LEU   133       4.491 -13.370  -4.554  1.00 73.30      A    O
ATOM    588  N   ALA   134       5.230 -11.248  -4.504  1.00 73.74      A    N
ATOM    589  CA  ALA   134       6.602 -11.575  -4.885  1.00 74.48      A    C
ATOM    590  CB  ALA   134       7.446 -10.314  -4.889  1.00 75.03      A    C
ATOM    591  C   ALA   134       7.255 -12.628  -4.001  1.00 75.73      A    C
ATOM    592  O   ALA   134       8.214 -13.278  -4.411  1.00 73.90      A    O
ATOM    593  N   LEU   135       6.743 -12.791  -2.786  1.00 78.60      A    N
ATOM    594  CA  LEU   135       7.309 -13.761  -1.860  1.00 81.85      A    C
ATOM    595  CB  LEU   135       6.842 -13.463  -0.439  1.00 78.00      A    C
ATOM    596  CG  LEU   135       7.491 -12.298   0.306  1.00 74.37      A    C
ATOM    597  CD1 LEU   135       6.520 -11.772   1.326  1.00 71.67      A    C
ATOM    598  CD2 LEU   135       8.775 -12.745   0.971  1.00 72.66      A    C
ATOM    599  C   LEU   135       6.876 -15.164  -2.258  1.00 86.28      A    C
ATOM    600  O   LEU   135       7.490 -16.155  -1.857  1.00 86.58      A    O
ATOM    601  N   LYS   136       5.807 -15.237  -3.047  1.00 92.64      A    N
ATOM    602  CA  LYS   136       5.318 -16.511  -3.560  1.00 99.95      A    C
ATOM    603  CB  LYS   136       3.922 -16.342  -4.172  1.00101.68      A    C
ATOM    604  CG  LYS   136       2.818 -16.042  -3.164  1.00104.97      A    C
ATOM    605  CD  LYS   136       1.451 -16.030  -3.834  1.00108.72      A    C
ATOM    606  CE  LYS   136       0.374 -15.490  -2.906  1.00112.39      A    C
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ATOM    607  NZ  LYS   136       0.413 -16.148  -1.572 1.00114.91      A    N
ATOM    608  C   LYS   136       6.276 -17.056  -4.613 1.00104.36      A    C
ATOM    609  O   LYS   136       6.599 -18.246  -4.616 1.00104.13      A    O
ATOM    610  N   LEU   137       6.735 -16.173  -5.495 1.00109.27      A    N
ATOM    611  CA  LEU   137       7.615 -16.559  -6.589 1.00112.82      A    C
ATOM    612  CB  LEU   137       8.316 -15.325  -7.149 1.00113.33      A    C
ATOM    613  CG  LEU   137       7.332 -14.245  -7.588 1.00114.59      A    C
ATOM    614  CD1 LEU   137       8.040 -13.223  -8.463 1.00113.74      A    C
ATOM    615  CD2 LEU   137       6.183 -14.900  -8.343 1.00113.79      A    C
ATOM    616  C   LEU   137       8.647 -17.590  -6.163 1.00113.26      A    C
ATOM    617  O   LEU   137       9.098 -17.601  -5.017 1.00116.86      A    O
ATOM    618  N   PRO   138       9.021 -18.482  -7.090 1.00111.23      A    N
ATOM    619  CD  PRO   138       8.460 -18.468  -8.452 1.00111.87      A    C
ATOM    620  CA  PRO   138       9.942 -19.607  -6.891 1.00109.31      A    C
ATOM    621  CB  PRO   138       9.671 -20.501  -8.091 1.00110.49      A    C
ATOM    622  CG  PRO   138       9.241 -19.542  -9.157 1.00111.00      A    C
ATOM    623  C   PRO   138      11.411 -19.196  -6.815 1.00106.05      A    C
ATOM    624  O   PRO   138      11.811 -18.178  -7.378 1.00104.55      A    O
ATOM    625  N   HIS   139      12.203 -20.014  -6.124 1.00103.94      A    N
ATOM    626  CA  HIS   139      13.634 -19.771  -5.942 1.00101.12      A    C
ATOM    627  CB  HIS   139      14.288 -19.368  -7.275 1.00106.04      A    C
ATOM    628  CG  HIS   139      14.255 -20.439  -8.326 1.00110.34      A    C
ATOM    629  CD2 HIS   139      13.765 -20.433  -9.589 1.00112.17      A    C
ATOM    630  ND1 HIS   139      14.799 -21.690  -8.133 1.00112.32      A    N
ATOM    631  CE1 HIS   139      14.647 -22.409  -9.232 1.00113.63      A    C
ATOM    632  NE2 HIS   139      14.023 -21.669 -10.130 1.00113.61      A    N
ATOM    633  C   HIS   139      13.894 -18.687  -4.885 1.00 95.84      A    C
ATOM    634  O   HIS   139      14.899 -18.738  -4.166 1.00 95.18      A    O
ATOM    635  N   VAL   140      12.977 -17.722  -4.794 1.00 87.12      A    N
ATOM    636  CA  VAL   140      13.104 -16.590  -3.881 1.00 78.27      A    C
ATOM    637  CB  VAL   140      11.864 -15.710  -3.945 1.00 76.69      A    C
ATOM    638  CG1 VAL   140      11.989 -14.581  -2.963 1.00 76.29      A    C
ATOM    639  CG2 VAL   140      11.684 -15.182  -5.340 1.00 76.45      A    C
ATOM    640  C   VAL   140      13.314 -16.999  -2.425 1.00 73.68      A    C
ATOM    641  O   VAL   140      12.556 -17.800  -1.886 1.00 74.17      A    O
ATOM    642  N   ASP   141      14.334 -16.425  -1.790 1.00 67.84      A    N
ATOM    643  CA  ASP   141      14.716 -16.781  -0.421 1.00 61.64      A    C
ATOM    644  CB  ASP   141      16.243 -16.806  -0.307 1.00 60.92      A    C
ATOM    645  CG  ASP   141      16.726 -17.205   1.077 1.00 60.19      A    C
ATOM    646  OD1 ASP   141      15.931 -17.128   2.038 1.00 62.25      A    O
ATOM    647  OD2 ASP   141      17.908 -17.594   1.204 1.00 57.97      A    O
ATOM    648  C   ASP   141      14.141 -15.800   0.605 1.00 58.24      A    C
ATOM    649  O   ASP   141      13.682 -16.199   1.677 1.00 56.40      A    O
ATOM    650  N   TYR   142      14.192 -14.514   0.269 1.00 54.75      A    N
ATOM    651  CA  TYR   142      13.602 -13.460   1.087 1.00 50.27      A    C
ATOM    652  CB  TYR   142      14.327 -13.346   2.429 1.00 49.53      A    C
ATOM    653  CG  TYR   142      15.789 -12.950   2.337 1.00 50.08      A    C
ATOM    654  CD1 TYR   142      16.173 -11.607   2.243 1.00 49.37      A    C
ATOM    655  CE1 TYR   142      17.505 -11.247   2.179 1.00 45.77      A    C
ATOM    656  CD2 TYR   142      16.787 -13.910   2.364 1.00 48.54      A    C
ATOM    657  CE2 TYR   142      18.119 -13.552   2.300 1.00 48.20      A    C
ATOM    658  CZ  TYR   142      18.470 -12.223   2.209 1.00 47.16      A    C
ATOM    659  OH  TYR   142      19.804 -11.890   2.162 1.00 47.82      A    O
ATOM    660  C   TYR   142      13.717 -12.153   0.335 1.00 48.09      A    C
ATOM    661  O   TYR   142      14.582 -12.011  -0.520 1.00 48.03      A    O
ATOM    662  N   ILE   143      12.847 -11.201   0.650 1.00 46.96      A    N
ATOM    663  CA  ILE   143      12.880  -9.894   0.002 1.00 45.43      A    C
ATOM    664  CB  ILE   143      11.558  -9.602  -0.718 1.00 43.93      A    C
ATOM    665  CG2 ILE   143      11.539  -8.159  -1.213 1.00 42.29      A    C
ATOM    666  CG1 ILE   143      11.377 -10.588  -1.877 1.00 44.21      A    C
ATOM    667  CD1 ILE   143      10.176 -10.287  -2.765 1.00 43.87      A    C
ATOM    668  C   ILE   143      13.122  -8.783   1.010 1.00 45.82      A    C
ATOM    669  O   ILE   143      12.432  -8.701   2.024 1.00 47.06      A    O
ATOM    670  N   GLU   144      14.090  -7.913   0.740 1.00 45.93      A    N
ATOM    671  CA  GLU   144      14.306  -6.784   1.634 1.00 45.04      A    C
ATOM    672  CB  GLU   144      15.774  -6.671   2.033 1.00 44.77      A    C
ATOM    673  CG  GLU   144      15.934  -6.424   3.525 1.00 46.74      A    C
ATOM    674  CD  GLU   144      17.360  -6.169   3.944 1.00 49.18      A    C
ATOM    675  OE1 GLU   144      18.061  -7.157   4.293 1.00 49.24      A    O
ATOM    676  OE2 GLU   144      17.774  -4.981   3.927 1.00 48.88      A    O
ATOM    677  C   GLU   144      13.832  -5.456   1.075 1.00 44.39      A    C
ATOM    678  O   GLU   144      13.848  -5.222  -0.133 1.00 45.65      A    O
ATOM    679  N   GLU   145      13.399  -4.581   1.970 1.00 43.72      A    N
ATOM    680  CA  GLU   145      12.995  -3.247   1.568 1.00 42.02      A    C
ATOM    681  CB  GLU   145      11.828  -2.797   2.427 1.00 43.89      A    C
ATOM    682  CG  GLU   145      11.463  -1.345   2.287 1.00 46.61      A    C
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ATOM    683  CD  GLU   145      10.678  -0.873   3.478  1.00 47.51      A    C
ATOM    684  OE1 GLU   145      11.226  -0.933   4.601  1.00 48.29      A    O
ATOM    685  OE2 GLU   145       9.518  -0.455   3.294  1.00 49.39      A    O
ATOM    686  C   GLU   145      14.168  -2.289   1.730  1.00 40.96      A    C
ATOM    687  O   GLU   145      14.794  -2.218   2.795  1.00 38.91      A    O
ATOM    688  N   ASP   146      14.459  -1.554   0.661  1.00 40.13      A    N
ATOM    689  CA  ASP   146      15.592  -0.625   0.625  1.00 38.49      A    C
ATOM    690  CB  ASP   146      15.517   0.226  -0.651  1.00 39.89      A    C
ATOM    691  CG  ASP   146      16.890   0.626  -1.178  1.00 40.94      A    C
ATOM    692  OD1 ASP   146      17.912   0.084  -0.697  1.00 41.19      A    O
ATOM    693  OD2 ASP   146      16.936   1.486  -2.085  1.00 41.04      A    O
ATOM    694  C   ASP   146      15.607   0.287   1.853  1.00 36.42      A    C
ATOM    695  O   ASP   146      14.557   0.627   2.406  1.00 37.06      A    O
ATOM    696  N   SER   147      16.801   0.690   2.262  1.00 33.43      A    N
ATOM    697  CA  SER   147      16.970   1.466   3.480  1.00 33.76      A    C
ATOM    698  CB  SER   147      17.033   0.516   4.675  1.00 30.49      A    C
ATOM    699  OG  SER   147      17.929   1.016   5.653  1.00 34.97      A    O
ATOM    700  C   SER   147      18.232  -2.367   3.436  1.00 34.29      A    C
ATOM    701  O   SER   147      19.248  -2.018   2.835  1.00 32.95      A    O
ATOM    702  N   SER   148      18.165   3.525   4.084  1.00 33.24      A    N
ATOM    703  CA  SER   148      19.235   4.508   3.973  1.00 30.80      A    C
ATOM    704  CB  SER   148      18.746   5.872   4.486  1.00 30.12      A    C
ATOM    705  OG  SER   148      17.859   6.474   3.555  1.00 30.98      A    O
ATOM    706  C   SER   148      20.513   4.110   4.704  1.00 29.06      A    C
ATOM    707  O   SER   148      20.469   3.465   5.749  1.00 28.62      A    O
ATOM    708  N   VAL   149      21.653   4.493   4.141  1.00 26.45      A    N
ATOM    709  CA  VAL   149      22.893   4.467   4.882  1.00 26.25      A    C
ATOM    710  CB  VAL   149      23.937   3.507   4.236  1.00 28.16      A    C
ATOM    711  CG1 VAL   149      23.389   2.082   4.231  1.00 27.27      A    C
ATOM    712  CG2 VAL   149      24.289   3.964   2.826  1.00 26.42      A    C
ATOM    713  C   VAL   149      23.479   5.875   4.976  1.00 26.13      A    C
ATOM    714  O   VAL   149      23.208   6.743   4.132  1.00 23.35      A    O
ATOM    715  N   PHE   150      24.277   6.083   6.024  1.00 27.27      A    N
ATOM    716  CA  PHE   150      24.789   7.399   6.408  1.00 26.72      A    C
ATOM    717  CB  PHE   150      24.070   7.889   7.654  1.00 23.59      A    C
ATOM    718  CG  PHE   150      22.611   7.992   7.489  1.00 23.95      A    C
ATOM    719  CD1 PHE   150      21.804   6.893   7.709  1.00 24.72      A    C
ATOM    720  CD2 PHE   150      22.034   9.191   7.112  1.00 25.04      A    C
ATOM    721  CE1 PHE   150      20.433   6.983   7.557  1.00 26.92      A    C
ATOM    722  CE2 PHE   150      20.676   9.295   6.957  1.00 27.24      A    C
ATOM    723  CZ  PHE   150      19.867   8.182   7.181  1.00 27.37      A    C
ATOM    724  C   PHE   150      26.287   7.388   6.714  1.00 27.96      A    C
ATOM    725  O   PHE   150      26.819   6.463   7.379  1.00 26.24      A    O
ATOM    726  N   ALA   151      26.952   8.438   6.256  1.00 27.06      A    N
ATOM    727  CA  ALA   151      28.330   8.673   6.627  1.00 29.75      A    C
ATOM    728  CB  ALA   151      28.763  10.047   6.132  1.00 29.52      A    C
ATOM    729  C   ALA   151      28.460   8.592   8.149  1.00 32.40      A    C
ATOM    730  O   ALA   151      27.541   8.990   8.876  1.00 34.17      A    O
ATOM    731  N   GLN   152      29.593   8.075   8.634  1.00 33.63      A    N
ATOM    732  CA  GLN   152      29.904   8.146  10.060  1.00 34.27      A    C
ATOM    733  CB  GLN   152      30.119   6.748  10.632  1.00 32.18      A    C
ATOM    734  CG  GLN   152      28.947   5.804  10.408  1.00 32.72      A    C
ATOM    735  CD  GLN   152      27.627   6.331  10.972  1.00 28.64      A    C
ATOM    736  OE1 GLN   152      27.453   6.448  12.193  1.00 21.85      A    O
ATOM    737  NE2 GLN   152      26.690   6.651  10.075  1.00 27.12      A    N
ATOM    738  C   GLN   152      31.141   9.000  10.346  1.00 37.30      A    C
ATOM    739  O   GLN   152      31.946   8.571  11.216  1.00 38.53      A    O
ATOM    740  OXT GLN   152      31.277  10.088   9.725  1.00 38.27      A    O
TER     741      GLN   152                                              A
ATOM    742  CB  SER   153      56.497  17.251  14.876  1.00115.65      B    C
ATOM    743  OG  SER   153      57.007  16.956  13.585  1.00117.41      B    O
ATOM    744  C   SER   153      54.149  16.488  14.361  1.00110.66      B    C
ATOM    745  O   SER   153      53.706  16.469  13.214  1.00110.93      B    O
ATOM    746  N   SER   153      54.578  18.106  16.192  1.00114.12      B    N
ATOM    747  CA  SER   153      55.014  17.658  14.839  1.00113.11      B    C
ATOM    748  N   ILE   154      53.900  15.523  15.245  1.00107.72      B    N
ATOM    749  CA  ILE   154      53.158  14.315  14.877  1.00104.32      B    C
ATOM    750  CB  ILE   154      53.840  13.049  15.430  1.00107.91      B    C
ATOM    751  CG2 ILE   154      53.052  11.818  15.029  1.00109.50      B    C
ATOM    752  CG1 ILE   154      55.262  12.947  14.887  1.00111.40      B    C
ATOM    753  CD1 ILE   154      55.319  12.871  13.381  1.00116.02      B    C
ATOM    754  C   ILE   154      51.719  14.330  15.383  1.00100.10      B    C
ATOM    755  O   ILE   154      51.448  14.755  16.506  1.00 97.82      B    O
ATOM    756  N   PRO   155      50.775  13.860  14.553  1.00 96.93      B    N
ATOM    757  CD  PRO   155      50.980  13.534  13.131  1.00 95.03      B    C
ATOM    758  CA  PRO   155      49.363  13.744  14.940  1.00 91.06      B    C
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ATOM    759  CB  PRO   155      48.678  13.254  13.666  1.00 92.51      B    C
ATOM    760  CG  PRO   155      49.602  13.653  12.564  1.00 94.48      B    C
ATOM    761  C   PRO   155      49.187  12.758  16.085  1.00 85.90      B    C
ATOM    762  O   PRO   155      49.609  11.611  15.983  1.00 86.91      B    O
ATOM    763  N   TRP   156      48.553  13.199  17.166  1.00 78.41      B    N
ATOM    764  CA  TRP   156      48.441  12.380  18.366  1.00 71.33      B    C
ATOM    765  CB  TRP   156      47.418  12.984  19.335  1.00 67.02      B    C
ATOM    766  CG  TRP   156      45.987  12.685  18.982  1.00 64.20      B    C
ATOM    767  CD2 TRP   156      45.260  11.474  19.254  1.00 62.56      B    C
ATOM    768  CE2 TRP   156      43.956  11.652  18.760  1.00 61.45      B    C
ATOM    769  CE3 TRP   156      45.588  10.258  19.865  1.00 61.09      B    C
ATOM    770  CD1 TRP   156      45.113  13.516  18.351  1.00 63.97      B    C
ATOM    771  NE1 TRP   156      43.892  12.906  18.214  1.00 62.71      B    N
ATOM    772  CZ2 TRP   156      42.980  10.667  18.861  1.00 59.75      B    C
ATOM    773  CZ3 TRP   156      44.620   9.283  19.962  1.00 59.49      B    C
ATOM    774  CH2 TRP   156      43.331   9.493  19.463  1.00 60.30      B    C
ATOM    775  C   TRP   156      48.043  10.945  18.036  1.00 69.39      B    C
ATOM    776  O   TRP   156      48.377  10.011  18.766  1.00 69.00      B    O
ATOM    777  N   ASN   157      47.329  10.777  16.930  1.00 68.55      B    N
ATOM    778  CA  ASN   157      46.667   9.521  16.621  1.00 67.01      B    C
ATOM    779  CB  ASN   157      45.359   9.807  15.890  1.00 65.67      B    C
ATOM    780  CG  ASN   157      45.544  10.738  14.714  1.00 64.99      B    C
ATOM    781  OD1 ASN   157      45.730  10.295  13.578  1.00 64.19      B    O
ATOM    782  ND2 ASN   157      45.491  12.041  14.978  1.00 63.63      B    N
ATOM    783  C   ASN   157      47.526   8.577  15.786  1.00 66.89      B    C
ATOM    784  O   ASN   157      47.284   7.373  15.748  1.00 66.52      B    O
ATOM    785  N   LEU   158      48.523   9.122  15.104  1.00 67.36      B    N
ATOM    786  CA  LEU   158      49.500   8.291  14.416  1.00 69.81      B    C
ATOM    787  CB  LEU   158      50.192   9.099  13.314  1.00 67.04      B    C
ATOM    788  CG  LEU   158      49.313   9.536  12.140  1.00 64.16      B    C
ATOM    789  CD1 LEU   158      50.117  10.432  11.209  1.00 61.97      B    C
ATOM    790  CD2 LEU   158      48.795   8.316  11.395  1.00 61.15      B    C
ATOM    791  C   LEU   158      50.523   7.796  15.442  1.00 72.86      B    C
ATOM    792  O   LEU   158      51.132   6.734  15.287  1.00 73.28      B    O
ATOM    793  N   GLU   159      50.692   8.580  16.500  1.00 76.18      B    N
ATOM    794  CA  GLU   159      51.581   8.234  17.597  1.00 78.78      B    C
ATOM    795  CB  GLU   159      51.771   9.459  18.499  1.00 80.32      B    C
ATOM    796  CG  GLU   159      52.326   9.149  19.870  1.00 87.64      B    C
ATOM    797  CD  GLU   159      53.837   9.022  19.872  1.00 92.62      B    C
ATOM    798  OE1 GLU   159      54.432   9.032  20.971  1.00 96.21      B    O
ATOM    799  OE2 GLU   159      54.436   8.913  18.778  1.00 97.33      B    O
ATOM    800  C   GLU   159      51.013   7.064  18.399  1.00 78.60      B    C
ATOM    801  O   GLU   159      51.761   6.270  18.967  1.00 78.52      B    O
ATOM    802  N   ARG   160      49.688   6.957  18.428  1.00 78.98      B    N
ATOM    803  CA  ARG   160      49.012   5.959  19.253  1.00 80.10      B    C
ATOM    804  CB  ARG   160      47.604   6.426  19.609  1.00 77.90      B    C
ATOM    805  CG  ARG   160      46.908   5.513  20.602  1.00 74.99      B    C
ATOM    806  CD  ARG   160      47.510   5.691  21.973  1.00 72.60      B    C
ATOM    807  NE  ARG   160      47.759   7.107  22.225  1.00 72.12      B    N
ATOM    808  CZ  ARG   160      46.859   7.951  22.734  1.00 70.97      B    C
ATOM    809  NH1 ARG   160      47.178   9.229  22.921  1.00 69.95      B    N
ATOM    810  NH2 ARG   160      45.644   7.523  23.068  1.00 67.47      B    N
ATOM    811  C   ARG   160      48.921   4.584  18.602  1.00 82.37      B    C
ATOM    812  O   ARG   160      48.769   3.576  19.288  1.00 81.03      B    O
ATOM    813  N   ILE   161      48.996   4.537  17.280  1.00 87.22      B    N
ATOM    814  CA  ILE   161      49.033   3.255  16.598  1.00 93.06      B    C
ATOM    815  CB  ILE   161      48.143   3.260  15.341  1.00 91.27      B    C
ATOM    816  CG2 ILE   161      46.691   3.417  15.742  1.00 91.17      B    C
ATOM    817  CG1 ILE   161      48.548   4.336  14.408  1.00 90.97      B    C
ATOM    818  CD1 ILE   161      47.707   4.457  13.157  1.00 89.92      B    C
ATOM    819  C   ILE   161      50.464   2.896  16.221  1.00 98.36      B    C
ATOM    820  O   ILE   161      50.711   1.922  15.512  1.00 98.21      B    O
ATOM    821  N   THR   162      51.406   3.693  16.714  1.00104.69      B    N
ATOM    822  CA  THR   162      52.823   3.383  16.580  1.00111.43      B    C
ATOM    823  CB  THR   162      53.593   4.576  16.012  1.00112.56      B    C
ATOM    824  OG1 THR   162      53.175   4.817  14.663  1.00112.68      B    O
ATOM    825  CG2 THR   162      55.085   4.300  16.043  1.00113.86      B    C
ATOM    826  C   THR   162      53.457   2.986  17.913  1.00117.00      B    C
ATOM    827  O   THR   162      53.682   3.827  18.787  1.00115.50      B    O
ATOM    828  N   PRO   163      53.769   1.690  18.070  1.00123.18      B    N
ATOM    829  CD  PRO   163      53.698   0.725  16.959  1.00126.42      B    C
ATOM    830  CA  PRO   163      54.269   1.069  19.302  1.00128.43      B    C
ATOM    831  CB  PRO   163      54.318  -0.418  18.957  1.00129.86      B    C
ATOM    832  CG  PRO   163      54.471  -0.449  17.477  1.00129.27      B    C
ATOM    833  C   PRO   163      55.634   1.598  19.745  1.00133.09      B    C
ATOM    834  O   PRO   163      56.310   2.300  18.995  1.00133.34      B    O
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ATOM	835	N	PRO	164	56.049	1.263	20.981	1.00	136.38	B N
ATOM	836	CD	PRO	164	55.196	0.623	21.997	1.00	137.29	B C
ATOM	837	CA	PRO	164	57.361	1.628	21.533	1.00	138.48	B C
ATOM	838	CB	PRO	164	57.315	1.092	22.964	1.00	138.17	B C
ATOM	839	CG	PRO	164	55.866	1.003	23.285	1.00	137.88	B C
ATOM	840	C	PRO	164	58.523	1.033	20.747	1.00	140.28	B C
ATOM	841	O	PRO	164	59.685	1.303	21.046	1.00	142.21	B O
ATOM	842	N	LEU	179	50.723	-2.852	-3.782	1.00	82.64	B N
ATOM	843	CA	LEU	179	50.541	-4.298	-3.720	1.00	82.37	B C
ATOM	844	CB	LEU	179	51.617	-4.927	-2.836	1.00	84.42	B C
ATOM	845	CG	LEU	179	51.895	-6.429	-2.990	1.00	86.63	B C
ATOM	846	CD1	LEU	179	52.687	-6.898	-1.772	1.00	87.95	B C
ATOM	847	CD2	LEU	179	50.605	-7.234	-3.119	1.00	85.71	B C
ATOM	848	C	LEU	179	49.167	-4.612	-3.135	1.00	80.73	B C
ATOM	849	O	LEU	179	48.333	-5.267	-3.773	1.00	81.56	B O
ATOM	850	N	VAL	180	48.940	-4.150	-1.908	1.00	76.81	B N
ATOM	851	CA	VAL	180	47.650	-4.322	-1.251	1.00	72.33	B C
ATOM	852	CB	VAL	180	47.816	-4.340	0.282	1.00	74.74	B C
ATOM	853	CG1	VAL	180	48.717	-3.206	0.709	1.00	77.30	B C
ATOM	854	CG2	VAL	180	46.467	-4.213	0.956	1.00	77.06	B C
ATOM	855	C	VAL	180	46.706	-3.194	-1.653	1.00	68.18	B C
ATOM	856	O	VAL	180	47.070	-2.013	-1.620	1.00	66.03	B O
ATOM	857	N	GLU	181	45.494	-3.574	-2.042	1.00	64.37	B N
ATOM	858	CA	GLU	181	44.511	-2.642	-2.592	1.00	59.68	B C
ATOM	859	CB	GLU	181	43.767	-3.316	-3.750	1.00	62.45	B C
ATOM	860	CG	GLU	181	43.358	-2.389	-4.874	1.00	68.37	B C
ATOM	861	CD	GLU	181	44.526	-1.982	-5.766	1.00	72.14	B C
ATOM	862	OE1	GLU	181	44.296	-1.238	-6.755	1.00	73.58	B O
ATOM	863	OE2	GLU	181	45.672	-2.404	-5.475	1.00	73.22	B O
ATOM	864	C	GLU	181	43.522	-2.258	-1.495	1.00	54.39	B C
ATOM	865	O	GLU	181	43.151	-3.092	-0.668	1.00	52.76	B O
ATOM	866	N	VAL	182	43.108	-0.997	-1.475	1.00	48.00	B N
ATOM	867	CA	VAL	182	42.099	-0.558	-0.514	1.00	41.39	B C
ATOM	868	CB	VAL	182	42.700	0.379	0.559	1.00	39.28	B C
ATOM	869	CG1	VAL	182	41.694	0.587	1.647	1.00	36.23	B C
ATOM	870	CG2	VAL	182	44.007	-0.198	1.122	1.00	35.21	B C
ATOM	871	C	VAL	182	40.956	0.178	-1.212	1.00	39.09	B C
ATOM	872	O	VAL	182	41.119	1.307	-1.673	1.00	37.28	B O
ATOM	873	N	TYR	183	39.804	-0.477	-1.305	1.00	37.90	B N
ATOM	874	CA	TYR	183	38.612	0.145	-1.863	1.00	36.33	B C
ATOM	875	CB	TYR	183	37.627	-0.918	-2.321	1.00	35.00	B C
ATOM	876	CG	TYR	183	38.035	-1.581	-3.609	1.00	36.79	B C
ATOM	877	CD1	TYR	183	39.028	-2.548	-3.636	1.00	36.52	B C
ATOM	878	CE1	TYR	183	39.395	-3.162	-4.818	1.00	37.26	B C
ATOM	879	CD2	TYR	183	37.421	-1.245	-4.804	1.00	38.38	B C
ATOM	880	CE2	TYR	183	37.782	-1.855	-5.994	1.00	39.27	B C
ATOM	881	CZ	TYR	183	38.767	-2.813	-5.997	1.00	38.74	B C
ATOM	882	OH	TYR	183	39.106	-3.424	-7.185	1.00	39.99	B O
ATOM	883	C	TYR	183	37.966	1.015	-0.807	1.00	36.03	B C
ATOM	884	O	TYR	183	37.905	0.641	0.355	1.00	37.83	B O
ATOM	885	N	LEU	184	37.493	2.187	-1.201	1.00	35.68	B N
ATOM	886	CA	LEU	184	36.837	3.073	-0.255	1.00	34.48	B C
ATOM	887	CB	LEU	184	37.638	4.370	-0.100	1.00	35.48	B C
ATOM	888	CG	LEU	184	36.889	5.451	0.685	1.00	37.28	B C
ATOM	889	CD1	LEU	184	36.613	4.911	2.098	1.00	37.59	B C
ATOM	890	CD2	LEU	184	37.680	6.775	0.708	1.00	35.89	B C
ATOM	891	C	LEU	184	35.437	3.376	-0.772	1.00	33.43	B C
ATOM	892	O	LEU	184	35.282	3.925	-1.864	1.00	31.65	B O
ATOM	893	N	LEU	185	34.419	3.003	0.000	1.00	33.22	B N
ATOM	894	CA	LEU	185	33.041	3.311	-0.380	1.00	33.87	B C
ATOM	895	CB	LEU	185	32.148	2.081	-0.216	1.00	31.98	B C
ATOM	896	CG	LEU	185	32.315	1.032	-1.314	1.00	30.98	B C
ATOM	897	CD1	LEU	185	33.624	0.314	-1.105	1.00	30.09	B C
ATOM	898	CD2	LEU	185	31.151	0.062	-1.291	1.00	31.06	B C
ATOM	899	C	LEU	185	32.480	4.470	0.430	1.00	34.21	B C
ATOM	900	O	LEU	185	32.153	4.308	1.608	1.00	33.81	B O
ATOM	901	N	ASP	186	32.358	5.628	-0.219	1.00	34.50	B N
ATOM	902	CA	ASP	186	32.154	6.889	0.486	1.00	34.92	B C
ATOM	903	CB	ASP	186	33.502	7.377	1.027	1.00	39.32	B C
ATOM	904	CG	ASP	186	33.365	8.366	2.196	1.00	45.74	B C
ATOM	905	OD1	ASP	186	33.661	7.946	3.344	1.00	50.09	B O
ATOM	906	OD2	ASP	186	32.990	9.553	1.985	1.00	46.44	B O
ATOM	907	C	ASP	186	31.553	7.968	-0.428	1.00	33.07	B C
ATOM	908	O	ASP	186	30.912	7.685	-1.451	1.00	31.20	B O
ATOM	909	N	THR	187	31.780	9.214	-0.033	1.00	29.79	B N
ATOM	910	CA	THR	187	31.400	10.368	-0.808	1.00	28.62	B C

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ATOM    911  CB  THR   187      31.427  11.636   0.071  1.00 28.27      B    C
ATOM    912  OG1 THR   187      32.779  11.985   0.392  1.00 31.09      B    O
ATOM    913  CG2 THR   187      30.692  11.386   1.376  1.00 29.63      B    C
ATOM    914  C   THR   187      32.376  10.512  -1.964  1.00 28.24      B    C
ATOM    915  O   THR   187      33.222   9.657  -2.167  1.00 27.28      B    O
ATOM    916  N   SER   188      32.247  11.577  -2.734  1.00 29.91      B    N
ATOM    917  CA  SER   188      33.194  11.839  -3.786  1.00 35.55      B    C
ATOM    918  CB  SER   188      32.696  12.975  -4.687  1.00 36.16      B    C
ATOM    919  OG  SER   188      31.476  13.520  -4.223  1.00 37.67      B    O
ATOM    920  C   SER   188      34.544  12.215  -3.185  1.00 39.38      B    C
ATOM    921  O   SER   188      34.634  12.600  -2.014  1.00 39.88      B    O
ATOM    922  N   ILE   189      35.592  12.096  -3.994  1.00 42.96      B    N
ATOM    923  CA  ILE   189      36.948  12.355  -3.530  1.00 45.75      B    C
ATOM    924  CB  ILE   189      37.794  11.082  -3.594  1.00 46.16      B    C
ATOM    925  CG2 ILE   189      39.070  11.281  -2.810  1.00 45.77      B    C
ATOM    926  CG1 ILE   189      37.018   9.901  -3.020  1.00 44.55      B    C
ATOM    927  CD1 ILE   189      37.195   9.736  -1.550  1.00 46.37      B    C
ATOM    928  C   ILE   189      37.643  13.408  -4.392  1.00 48.83      B    C
ATOM    929  O   ILE   189      37.635  13.327  -5.626  1.00 48.75      B    O
ATOM    930  N   GLN   190      38.254  14.390  -3.735  1.00 52.85      B    N
ATOM    931  CA  GLN   190      39.228  15.268  -4.382  1.00 55.02      B    C
ATOM    932  CB  GLN   190      39.485  16.498  -3.516  1.00 57.93      B    C
ATOM    933  CG  GLN   190      40.325  17.544  -4.212  1.00 64.58      B    C
ATOM    934  CD  GLN   190      40.435  18.828  -3.438  1.00 67.20      B    C
ATOM    935  OE1 GLN   190      41.333  19.625  -3.678  1.00 70.49      B    O
ATOM    936  NE2 GLN   190      39.519  19.041  -2.506  1.00 70.62      B    N
ATOM    937  C   GLN   190      40.529  14.492  -4.551  1.00 54.50      B    C
ATOM    938  O   GLN   190      41.373  14.483  -3.673  1.00 54.01      B    O
ATOM    939  N   SER   191      40.694  13.827  -5.678  1.00 54.52      B    N
ATOM    940  CA  SER   191      41.750  12.835  -5.761  1.00 54.55      B    C
ATOM    941  CB  SER   191      41.455  11.842  -6.895  1.00 51.67      B    C
ATOM    942  OG  SER   191      41.141  12.506  -8.102  1.00 44.78      B    O
ATOM    943  C   SER   191      43.127  13.451  -5.936  1.00 55.93      B    C
ATOM    944  O   SER   191      44.137  12.780  -5.770  1.00 54.97      B    O
ATOM    945  N   ASP   192      43.175  14.731  -6.272  1.00 58.49      B    N
ATOM    946  CA  ASP   192      44.462  15.349  -6.511  1.00 61.41      B    C
ATOM    947  CB  ASP   192      44.475  16.033  -7.881  1.00 56.12      B    C
ATOM    948  CG  ASP   192      43.554  17.212  -7.957  1.00 51.17      B    C
ATOM    949  OD1 ASP   192      42.863  17.489  -6.959  1.00 50.15      B    O
ATOM    950  OD2 ASP   192      43.521  17.862  -9.023  1.00 44.73      B    O
ATOM    951  C   ASP   192      44.964  16.303  -5.424  1.00 66.24      B    C
ATOM    952  O   ASP   192      45.887  17.063  -5.663  1.00 65.77      B    O
ATOM    953  N   HIS   193      44.371  16.244  -4.234  1.00 73.45      B    N
ATOM    954  CA  HIS   193      44.968  16.813  -3.023  1.00 81.62      B    C
ATOM    955  CB  HIS   193      44.239  16.265  -1.793  1.00 82.94      B    C
ATOM    956  CG  HIS   193      44.367  17.120  -0.574  1.00 84.93      B    C
ATOM    957  CD2 HIS   193      43.639  18.178  -0.155  1.00 86.25      B    C
ATOM    958  ND1 HIS   193      45.324  16.906   0.392  1.00 85.89      B    N
ATOM    959  CE1 HIS   193      45.180  17.796   1.356  1.00 87.01      B    C
ATOM    960  NE2 HIS   193      44.164  18.579   1.048  1.00 87.56      B    N
ATOM    961  C   HIS   193      46.434  16.390  -2.985  1.00 86.32      B    C
ATOM    962  O   HIS   193      46.780  15.335  -3.506  1.00 89.16      B    O
ATOM    963  N   ARG   194      47.305  17.187  -2.377  1.00 90.27      B    N
ATOM    964  CA  ARG   194      48.720  16.832  -2.396  1.00 94.87      B    C
ATOM    965  CB  ARG   194      49.606  18.023  -2.003  1.00103.52      B    C
ATOM    966  CG  ARG   194      49.614  18.358  -0.519  1.00114.19      B    C
ATOM    967  CD  ARG   194      51.028  18.385   0.039  1.00122.81      B    C
ATOM    968  NE  ARG   194      51.653  19.700  -0.052  1.00129.82      B    N
ATOM    969  CZ  ARG   194      51.872  20.489   0.992  1.00133.99      B    C
ATOM    970  NH1 ARG   194      52.447  21.666   0.822  1.00136.60      B    N
ATOM    971  NH2 ARG   194      51.515  20.099   2.206  1.00136.97      B    N
ATOM    972  C   ARG   194      48.973  15.676  -1.450  1.00 92.97      B    C
ATOM    973  O   ARG   194      49.986  14.993  -1.547  1.00 93.22      B    O
ATOM    974  N   GLU   195      48.038  15.454  -0.539  1.00 90.26      B    N
ATOM    975  CA  GLU   195      48.202  14.438   0.483  1.00 87.06      B    C
ATOM    976  CB  GLU   195      47.253  14.733   1.644  1.00 87.51      B    C
ATOM    977  CG  GLU   195      47.374  13.788   2.814  1.00 89.28      B    C
ATOM    978  CD  GLU   195      48.483  14.157   3.778  1.00 88.92      B    C
ATOM    979  OE1 GLU   195      49.400  14.915   3.402  1.00 88.50      B    O
ATOM    980  OE2 GLU   195      48.434  13.679   4.927  1.00 90.60      B    O
ATOM    981  C   GLU   195      47.955  13.040  -0.074  1.00 84.15      B    C
ATOM    982  O   GLU   195      48.557  12.069   0.377  1.00 84.55      B    O
ATOM    983  N   ILE   196      47.080  12.937  -1.065  1.00 79.94      B    N
ATOM    984  CA  ILE   196      46.715  11.640  -1.609  1.00 77.04      B    C
ATOM    985  CB  ILE   196      45.258  11.283  -1.261  1.00 76.26      B    C
ATOM    986  CG2 ILE   196      45.079  11.203   0.241  1.00 73.41      B    C
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ATOM    987  CG1 ILE   196      44.319  12.332  -1.844  1.00 74.97      B    C
ATOM    988  CD1 ILE   196      42.868  11.946  -1.783  1.00 75.89      B    C
ATOM    989  C   ILE   196      46.881  11.561  -3.125  1.00 76.54      B    C
ATOM    990  O   ILE   196      46.491  10.571  -3.743  1.00 74.38      B    O
ATOM    991  N   GLU   197      47.456  12.597  -3.729  1.00 77.49      B    N
ATOM    992  CA  GLU   197      47.596  12.625  -5.181  1.00 78.27      B    C
ATOM    993  CB  GLU   197      48.293  13.911  -5.637  1.00 79.61      B    C
ATOM    994  CG  GLU   197      49.760  14.018  -5.283  1.00 85.72      B    C
ATOM    995  CD  GLU   197      50.448  15.218  -5.934  1.00 88.78      B    C
ATOM    996  OE1 GLU   197      51.690  15.174  -6.079  1.00 89.81      B    O
ATOM    997  OE2 GLU   197      49.752  16.200  -6.299  1.00 90.86      B    O
ATOM    998  C   GLU   197      48.356  11.405  -5.701  1.00 76.80      B    C
ATOM    999  O   GLU   197      49.454  11.099  -5.248  1.00 76.81      B    O
ATOM   1000  N   GLY   198      47.749  10.707  -6.653  1.00 75.14      B    N
ATOM   1001  CA  GLY   198      48.355   9.511  -7.202  1.00 72.34      B    C
ATOM   1002  C   GLY   198      47.946   8.230  -6.493  1.00 70.89      B    C
ATOM   1003  O   GLY   198      48.153   7.143  -7.013  1.00 69.29      B    O
ATOM   1004  N   ARG   199      47.352   8.357  -5.312  1.00 71.26      B    N
ATOM   1005  CA  ARG   199      47.126   7.214  -4.436  1.00 70.32      B    C
ATOM   1006  CB  ARG   199      47.618   7.544  -3.031  1.00 74.10      B    C
ATOM   1007  CG  ARG   199      49.106   7.797  -3.006  1.00 83.59      B    C
ATOM   1008  CD  ARG   199      49.602   8.217  -1.650  1.00 91.99      B    C
ATOM   1009  NE  ARG   199      51.056   8.139  -1.592  1.00100.21      B    N
ATOM   1010  CZ  ARG   199      51.760   8.332  -0.487  1.00104.98      B    C
ATOM   1011  NH1 ARG   199      53.079   8.243  -0.516  1.00108.28      B    N
ATOM   1012  NH2 ARG   199      51.138   8.617   0.646  1.00109.18      B    N
ATOM   1013  C   ARG   199      45.680   6.750  -4.378  1.00 67.21      B    C
ATOM   1014  O   ARG   199      45.382   5.730  -3.777  1.00 67.23      B    O
ATOM   1015  N   VAL   200      44.786   7.507  -5.001  1.00 63.27      B    N
ATOM   1016  CA  VAL   200      43.364   7.183  -5.016  1.00 58.38      B    C
ATOM   1017  CB  VAL   200      42.529   8.240  -4.274  1.00 57.40      B    C
ATOM   1018  CG1 VAL   200      41.049   7.967  -4.484  1.00 55.82      B    C
ATOM   1019  CG2 VAL   200      42.861   8.226  -2.799  1.00 55.70      B    C
ATOM   1020  C   VAL   200      42.859   7.126  -6.442  1.00 56.33      B    C
ATOM   1021  O   VAL   200      42.698   8.153  -7.095  1.00 56.53      B    O
ATOM   1022  N   MET   201      42.601   5.921  -6.924  1.00 55.20      B    N
ATOM   1023  CA  MET   201      42.062   5.744  -8.260  1.00 55.32      B    C
ATOM   1024  CB  MET   201      42.500   4.398  -8.830  1.00 55.79      B    C
ATOM   1025  CG  MET   201      42.155   4.221 -10.283  1.00 58.69      B    C
ATOM   1026  SD  MET   201      40.673   3.243 -10.522  1.00 64.01      B    S
ATOM   1027  CE  MET   201      40.321   3.598 -12.296  1.00 63.64      B    C
ATOM   1028  C   MET   201      40.554   5.794  -8.163  1.00 53.91      B    C
ATOM   1029  O   MET   201      39.950   5.013  -7.440  1.00 55.03      B    O
ATOM   1030  N   VAL   202      39.940   6.723  -8.875  1.00 53.21      B    N
ATOM   1031  CA  VAL   202      38.504   6.899  -8.744  1.00 52.50      B    C
ATOM   1032  CB  VAL   202      38.121   8.387  -8.828  1.00 47.24      B    C
ATOM   1033  CG1 VAL   202      36.670   8.529  -9.158  1.00 41.41      B    C
ATOM   1034  CG2 VAL   202      38.421   9.053  -7.509  1.00 41.18      B    C
ATOM   1035  C   VAL   202      37.768   6.120  -9.813  1.00 54.26      B    C
ATOM   1036  O   VAL   202      37.839   6.465 -10.992  1.00 54.98      B    O
ATOM   1037  N   THR   203      37.069   5.064  -9.394  1.00 55.90      B    N
ATOM   1038  CA  THR   203      36.356   4.210 -10.336  1.00 59.12      B    C
ATOM   1039  CB  THR   203      35.896   2.875  -9.690  1.00 57.76      B    C
ATOM   1040  OG1 THR   203      34.699   3.080  -8.924  1.00 55.18      B    O
ATOM   1041  CG2 THR   203      36.987   2.336  -8.768  1.00 55.56      B    C
ATOM   1042  C   THR   203      35.139   4.953 -10.855  1.00 61.90      B    C
ATOM   1043  O   THR   203      34.806   6.041 -10.382  1.00 63.12      B    O
ATOM   1044  N   ASP   204      34.477   4.374 -11.839  1.00 64.10      B    N
ATOM   1045  CA  ASP   204      33.344   5.038 -12.446  1.00 66.16      B    C
ATOM   1046  CB  ASP   204      33.337   4.745 -13.941  1.00 70.85      B    C
ATOM   1047  CG  ASP   204      34.107   3.476 -14.280  1.00 77.17      B    C
ATOM   1048  OD1 ASP   204      33.557   2.369 -14.052  1.00 77.27      B    O
ATOM   1049  OD2 ASP   204      35.265   3.588 -14.764  1.00 80.38      B    O
ATOM   1050  C   ASP   204      32.043   4.578 -11.797  1.00 64.17      B    C
ATOM   1051  O   ASP   204      30.981   4.625 -12.413  1.00 66.46      B    O
ATOM   1052  N   PHE   205      32.124   4.136 -10.547  1.00 60.33      B    N
ATOM   1053  CA  PHE   205      30.941   3.653  -9.848  1.00 57.09      B    C
ATOM   1054  CB  PHE   205      31.305   2.508  -8.904  1.00 58.44      B    C
ATOM   1055  CG  PHE   205      30.137   1.993  -8.137  1.00 58.36      B    C
ATOM   1056  CD1 PHE   205      29.870   2.465  -6.867  1.00 59.33      B    C
ATOM   1057  CD2 PHE   205      29.246   1.106  -8.722  1.00 60.27      B    C
ATOM   1058  CE1 PHE   205      28.727   2.071  -6.192  1.00 60.30      B    C
ATOM   1059  CE2 PHE   205      28.100   0.704  -8.054  1.00 61.35      B    C
ATOM   1060  CZ  PHE   205      27.839   1.190  -6.787  1.00 61.17      B    C
ATOM   1061  C   PHE   205      30.202   4.738  -9.055  1.00 54.53      B    C
ATOM   1062  O   PHE   205      30.717   5.279  -8.077  1.00 52.72      B    O
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ATOM   1063  N   GLU   206      28.981   5.040  -9.478  1.00 52.93      B    N
ATOM   1064  CA  GLU   206      28.152   6.010  -8.774  1.00 51.13      B    C
ATOM   1065  CB  GLU   206      28.037   7.300  -9.595  1.00 53.70      B    C
ATOM   1066  CG  GLU   206      27.201   8.385  -8.934  1.00 57.85      B    C
ATOM   1067  CD  GLU   206      27.691   9.796  -9.245  1.00 59.92      B    C
ATOM   1068  OE1 GLU   206      27.017  10.770  -8.839  1.00 61.92      B    O
ATOM   1069  OE2 GLU   206      28.748   9.936  -9.893  1.00 60.90      B    O
ATOM   1070  C   GLU   206      26.763   5.440  -8.513  1.00 47.24      B    C
ATOM   1071  O   GLU   206      25.986   5.234  -9.429  1.00 47.31      B    O
ATOM   1072  N   ASN   207      26.459   5.175  -7.254  1.00 43.16      B    N
ATOM   1073  CA  ASN   207      25.086   4.929  -6.854  1.00 37.74      B    C
ATOM   1074  CB  ASN   207      24.857   3.447  -6.593  1.00 39.88      B    C
ATOM   1075  CG  ASN   207      23.494   2.998  -7.059  1.00 41.36      B    C
ATOM   1076  OD1 ASN   207      23.376   2.105  -7.914  1.00 40.04      B    O
ATOM   1077  ND2 ASN   207      22.446   3.634  -6.523  1.00 39.17      B    N
ATOM   1078  C   ASN   207      24.736   5.714  -5.606  1.00 34.09      B    C
ATOM   1079  O   ASN   207      25.011   5.278  -4.484  1.00 32.93      B    O
ATOM   1080  N   VAL   208      24.131   6.877  -5.814  1.00 31.06      B    N
ATOM   1081  CA  VAL   208      23.780   7.766  -4.719  1.00 28.94      B    C
ATOM   1082  CB  VAL   208      24.660   9.046  -4.728  1.00 29.67      B    C
ATOM   1083  CG1 VAL   208      26.124   8.677  -4.589  1.00 30.43      B    C
ATOM   1084  CG2 VAL   208      24.436   9.825  -6.006  1.00 24.70      B    C
ATOM   1085  C   VAL   208      22.327   8.181  -4.864  1.00 29.88      B    C
ATOM   1086  O   VAL   208      21.841   8.390  -5.973  1.00 31.23      B    O
ATOM   1087  N   PRO   209      21.599   8.298  -3.747  1.00 31.45      B    N
ATOM   1088  CD  PRO   209      21.915   7.782  -2.406  1.00 31.28      B    C
ATOM   1089  CA  PRO   209      20.289   8.958  -3.785  1.00 28.45      B    C
ATOM   1090  CB  PRO   209      19.697   8.638  -2.426  1.00 28.25      B    C
ATOM   1091  CG  PRO   209      20.892   8.463  -1.549  1.00 30.42      B    C
ATOM   1092  C   PRO   209      20.387  10.467  -4.020  1.00 29.17      B    C
ATOM   1093  O   PRO   209      21.474  11.040  -4.003  1.00 27.51      B    O
ATOM   1094  N   GLU   210      19.235  11.102  -4.220  1.00 32.85      B    N
ATOM   1095  CA  GLU   210      19.148  12.539  -4.455  1.00 33.71      B    C
ATOM   1096  CB  GLU   210      17.762  12.914  -4.962  1.00 39.61      B    C
ATOM   1097  CG  GLU   210      17.373  12.334  -6.302  1.00 51.73      B    C
ATOM   1098  CD  GLU   210      16.081  12.973  -6.857  1.00 61.74      B    C
ATOM   1099  OE1 GLU   210      15.148  13.298  -6.064  1.00 64.35      B    O
ATOM   1100  OE2 GLU   210      16.003  13.157  -8.097  1.00 67.46      B    O
ATOM   1101  C   GLU   210      19.427  13.355  -3.202  1.00 31.17      B    C
ATOM   1102  O   GLU   210      19.150  12.909  -2.089  1.00 28.89      B    O
ATOM   1103  N   GLU   211      19.979  14.553  -3.398  1.00 29.36      B    N
ATOM   1104  CA  GLU   211      20.047  15.546  -2.333  1.00 30.97      B    C
ATOM   1105  CB  GLU   211      20.886  16.759  -2.766  1.00 31.25      B    C
ATOM   1106  CG  GLU   211      22.143  16.448  -3.591  1.00 33.76      B    C
ATOM   1107  CD  GLU   211      23.166  15.622  -2.829  1.00 36.82      B    C
ATOM   1108  OE1 GLU   211      23.159  15.657  -1.576  1.00 37.51      B    O
ATOM   1109  OE2 GLU   211      23.980  14.928  -3.485  1.00 39.74      B    O
ATOM   1110  C   GLU   211      18.619  16.009  -2.014  1.00 32.21      B    C
ATOM   1111  O   GLU   211      17.769  16.094  -2.900  1.00 32.92      B    O
ATOM   1112  N   ASP   212      18.356  16.296  -0.746  1.00 33.11      B    N
ATOM   1113  CA  ASP   212      17.104  16.919  -0.326  1.00 31.22      B    C
ATOM   1114  CB  ASP   212      17.006  16.843   1.207  1.00 33.18      B    C
ATOM   1115  CG  ASP   212      15.875  17.694   1.788  1.00 37.82      B    C
ATOM   1116  OD1 ASP   212      15.010  18.208   1.032  1.00 38.10      B    O
ATOM   1117  OD2 ASP   212      15.861  17.846   3.030  1.00 39.62      B    O
ATOM   1118  C   ASP   212      17.094  18.372  -0.805  1.00 29.26      B    C
ATOM   1119  O   ASP   212      17.763  19.234  -0.228  1.00 27.81      B    O
ATOM   1120  N   GLY   213      16.330  18.626  -1.863  1.00 27.67      B    N
ATOM   1121  CA  GLY   213      16.248  19.952  -2.463  1.00 26.36      B    C
ATOM   1122  C   GLY   213      15.807  21.106  -1.576  1.00 26.31      B    C
ATOM   1123  O   GLY   213      16.199  22.252  -1.805  1.00 23.54      B    O
ATOM   1124  N   THR   214      14.996  20.820  -0.561  1.00 29.38      B    N
ATOM   1125  CA  THR   214      14.552  21.854   0.380  1.00 32.08      B    C
ATOM   1126  CB  THR   214      13.732  21.268   1.535  1.00 32.59      B    C
ATOM   1127  OG1 THR   214      14.618  20.560   2.414  1.00 33.19      B    O
ATOM   1128  CG2 THR   214      12.684  20.311   1.027  1.00 32.64      B    C
ATOM   1129  C   THR   214      15.788  22.468   1.033  1.00 33.20      B    C
ATOM   1130  O   THR   214      15.720  23.556   1.613  1.00 34.45      B    O
ATOM   1131  N   ARG   215      16.908  21.750   0.965  1.00 32.69      B    N
ATOM   1132  CA  ARG   215      17.994  21.986   1.903  1.00 32.87      B    C
ATOM   1133  CB  ARG   215      17.946  20.917   2.987  1.00 31.54      B    C
ATOM   1134  CG  ARG   215      18.150  21.465   4.372  1.00 31.05      B    C
ATOM   1135  CD  ARG   215      17.327  20.692   5.370  1.00 31.52      B    C
ATOM   1136  NE  ARG   215      17.244  19.263   5.060  1.00 30.75      B    N
ATOM   1137  CZ  ARG   215      17.219  18.325   6.004  1.00 31.15      B    C
ATOM   1138  NH1 ARG   215      17.135  17.031   5.704  1.00 24.64      B    N
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ATOM   1139  NH2 ARG   215      17.290  18.708   7.274  1.00 33.67      B    N
ATOM   1140  C   ARG   215      19.395  22.043   1.285  1.00 33.56      B    C
ATOM   1141  O   ARG   215      20.372  22.345   1.974  1.00 32.49      B    O
ATOM   1142  N   PHE   216      19.488  21.768  -0.012  1.00 35.28      B    N
ATOM   1143  CA  PHE   216      20.788  21.626  -0.657  1.00 38.92      B    C
ATOM   1144  CB  PHE   216      20.867  20.293  -1.390  1.00 35.82      B    C
ATOM   1145  CG  PHE   216      22.161  20.080  -2.116  1.00 30.16      B    C
ATOM   1146  CD1 PHE   216      22.198  20.076  -3.499  1.00 25.91      B    C
ATOM   1147  CD2 PHE   216      23.337  19.866  -1.411  1.00 30.02      B    C
ATOM   1148  CE1 PHE   216      23.383  19.862  -4.179  1.00 25.89      B    C
ATOM   1149  CE2 PHE   216      24.539  19.647  -2.083  1.00 30.04      B    C
ATOM   1150  CZ  PHE   216      24.565  19.646  -3.471  1.00 26.63      B    C
ATOM   1151  C   PHE   216      21.128  22.726  -1.640  1.00 42.83      B    C
ATOM   1152  O   PHE   216      20.336  23.043  -2.528  1.00 43.81      B    O
ATOM   1153  N   HIS   217      22.326  23.284  -1.498  1.00 47.52      B    N
ATOM   1154  CA  HIS   217      22.812  24.292  -2.431  1.00 52.66      B    C
ATOM   1155  CB  HIS   217      22.869  25.642  -1.731  1.00 50.71      B    C
ATOM   1156  CG  HIS   217      21.531  26.130  -1.273  1.00 50.46      B    C
ATOM   1157  CD2 HIS   217      21.019  26.293  -0.030  1.00 50.17      B    C
ATOM   1158  ND1 HIS   217      20.531  26.491  -2.152  1.00 49.45      B    N
ATOM   1159  CE1 HIS   217      19.461  26.854  -1.467  1.00 50.58      B    C
ATOM   1160  NE2 HIS   217      19.729  26.743  -0.178  1.00 48.98      B    N
ATOM   1161  C   HIS   217      24.180  23.930  -2.979  1.00 57.43      B    C
ATOM   1162  O   HIS   217      25.180  24.121  -2.308  1.00 59.37      B    O
ATOM   1163  N   ARG   218      24.216  23.419  -4.206  1.00 64.96      B    N
ATOM   1164  CA  ARG   218      25.442  22.892  -4.802  1.00 72.47      B    C
ATOM   1165  CB  ARG   218      25.220  22.646  -6.300  1.00 78.99      B    C
ATOM   1166  CG  ARG   218      26.190  21.661  -6.954  1.00 90.87      B    C
ATOM   1167  CD  ARG   218      25.535  20.276  -7.165  1.00101.66      B    C
ATOM   1168  NE  ARG   218      26.490  19.288  -7.654  1.00114.14      B    N
ATOM   1169  CZ  ARG   218      26.150  18.068  -8.073  1.00121.60      B    C
ATOM   1170  NH1 ARG   218      24.872  17.680  -8.065  1.00127.19      B    N
ATOM   1171  NH2 ARG   218      27.081  17.221  -8.505  1.00127.03      B    N
ATOM   1172  C   ARG   218      26.608  23.862  -4.603  1.00 73.27      B    C
ATOM   1173  O   ARG   218      27.765  23.464  -4.575  1.00 74.75      B    O
ATOM   1174  N   GLN   219      26.274  25.134  -4.441  1.00 73.30      B    N
ATOM   1175  CA  GLN   219      27.223  26.237  -4.488  1.00 70.94      B    C
ATOM   1176  CB  GLN   219      26.467  27.502  -4.879  1.00 75.90      B    C
ATOM   1177  CG  GLN   219      25.114  27.586  -4.175  1.00 83.68      B    C
ATOM   1178  CD  GLN   219      24.098  28.401  -4.942  1.00 89.19      B    C
ATOM   1179  OE1 GLN   219      22.915  28.422  -4.599  1.00 94.35      B    O
ATOM   1180  NE2 GLN   219      24.554  29.083  -5.991  1.00 93.47      B    N
ATOM   1181  C   GLN   219      27.926  26.450  -3.151  1.00 66.77      B    C
ATOM   1182  O   GLN   219      29.042  26.950  -3.105  1.00 65.68      B    O
ATOM   1183  N   ALA   220      27.250  26.096  -2.065  1.00 62.72      B    N
ATOM   1184  CA  ALA   220      27.798  26.247  -0.724  1.00 58.15      B    C
ATOM   1185  CB  ALA   220      26.714  26.721   0.250  1.00 58.33      B    C
ATOM   1186  C   ALA   220      28.304  24.897  -0.295  1.00 55.57      B    C
ATOM   1187  O   ALA   220      29.020  24.768   0.694  1.00 54.79      B    O
ATOM   1188  N   SER   221      27.901  23.882  -1.046  1.00 52.69      B    N
ATOM   1189  CA  SER   221      28.148  22.512  -0.657  1.00 48.98      B    C
ATOM   1190  CB  SER   221      27.234  21.572  -1.442  1.00 48.25      B    C
ATOM   1191  OG  SER   221      27.591  20.221  -1.196  1.00 52.95      B    O
ATOM   1192  C   SER   221      29.612  22.145  -0.876  1.00 45.54      B    C
ATOM   1193  O   SER   221      30.244  22.604  -1.823  1.00 43.51      B    O
ATOM   1194  N   LYS   222      30.140  21.329   0.029  1.00 43.16      B    N
ATOM   1195  CA  LYS   222      31.494  20.805  -0.064  1.00 40.62      B    C
ATOM   1196  CB  LYS   222      32.293  21.215   1.176  1.00 42.07      B    C
ATOM   1197  CG  LYS   222      32.478  22.733   1.292  1.00 45.25      B    C
ATOM   1198  CD  LYS   222      32.723  23.204   2.724  1.00 48.85      B    C
ATOM   1199  CE  LYS   222      34.164  22.947   3.161  1.00 51.16      B    C
ATOM   1200  NZ  LYS   222      34.554  23.815   4.315  1.00 55.09      B    N
ATOM   1201  C   LYS   222      31.409  19.285  -0.183  1.00 38.00      B    C
ATOM   1202  O   LYS   222      31.643  18.554   0.777  1.00 35.80      B    O
ATOM   1203  N   CYS   223      31.073  18.833  -1.383  1.00 36.43      B    N
ATOM   1204  CA  CYS   223      30.694  17.455  -1.618  1.00 37.63      B    C
ATOM   1205  C   CYS   223      31.746  16.399  -1.325  1.00 36.41      B    C
ATOM   1206  O   CYS   223      31.424  15.223  -1.246  1.00 36.97      B    O
ATOM   1207  CB  CYS   223      30.228  17.288  -3.057  1.00 37.34      B    C
ATOM   1208  SG  CYS   223      28.629  18.083  -3.444  1.00 45.36      B    S
ATOM   1209  N   ASP   224      32.998  16.808  -1.173  1.00 35.94      B    N
ATOM   1210  CA  ASP   224      34.088  15.846  -1.114  1.00 34.10      B    C
ATOM   1211  CB  ASP   224      35.177  16.192  -2.129  1.00 33.40      B    C
ATOM   1212  CG  ASP   224      34.719  16.017  -3.560  1.00 33.62      B    C
ATOM   1213  OD1 ASP   224      33.643  15.412  -3.775  1.00 33.19      B    O
ATOM   1214  OD2 ASP   224      35.445  16.478  -4.468  1.00 33.20      B    O
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ATOM	1215	C	ASP	224	34.712	15.808	0.258	1.00	34.14	B	C
ATOM	1216	O	ASP	224	35.558	14.953	0.532	1.00	34.57	B	O
ATOM	1217	N	SER	225	34.311	16.743	1.116	1.00	31.75	B	N
ATOM	1218	CA	SER	225	34.855	16.810	2.468	1.00	31.41	B	C
ATOM	1219	CB	SER	225	33.947	17.663	3.351	1.00	30.07	B	C
ATOM	1220	OG	SER	225	33.806	17.048	4.627	1.00	34.20	B	O
ATOM	1221	C	SER	225	35.119	15.458	3.184	1.00	30.28	B	C
ATOM	1222	O	SER	225	36.241	15.195	3.603	1.00	30.27	B	O
ATOM	1223	N	HIS	226	34.091	14.629	3.338	1.00	29.35	B	N
ATOM	1224	CA	HIS	226	34.120	13.509	4.272	1.00	29.88	B	C
ATOM	1225	CB	HIS	226	32.688	13.036	4.527	1.00	30.92	B	C
ATOM	1226	CG	HIS	226	32.582	11.721	5.236	1.00	32.20	B	C
ATOM	1227	CD2	HIS	226	32.413	11.423	6.548	1.00	32.53	B	C
ATOM	1228	ND1	HIS	226	32.571	10.514	4.568	1.00	32.58	B	N
ATOM	1229	CE1	HIS	226	32.397	9.531	5.436	1.00	31.14	B	C
ATOM	1230	NE2	HIS	226	32.299	10.056	6.645	1.00	31.62	B	N
ATOM	1231	C	HIS	226	34.969	12.355	3.748	1.00	32.22	B	C
ATOM	1232	O	HIS	226	35.771	11.760	4.493	1.00	32.16	B	O
ATOM	1233	N	GLY	227	34.801	12.043	2.465	1.00	32.20	B	N
ATOM	1234	CA	GLY	227	35.568	10.969	1.869	1.00	31.70	B	C
ATOM	1235	C	GLY	227	37.021	11.318	1.607	1.00	31.69	B	C
ATOM	1236	O	GLY	227	37.911	10.485	1.821	1.00	34.79	B	O
ATOM	1237	N	THR	228	37.282	12.536	1.145	1.00	29.42	B	N
ATOM	1238	CA	THR	228	38.658	12.930	0.843	1.00	29.53	B	C
ATOM	1239	CB	THR	228	38.732	14.352	0.270	1.00	27.13	B	C
ATOM	1240	OG1	THR	228	37.899	14.454	-0.891	1.00	28.15	B	O
ATOM	1241	CG2	THR	228	40.151	14.674	-0.146	1.00	25.42	B	C
ATOM	1242	C	THR	228	39.526	12.868	2.105	1.00	29.67	B	C
ATOM	1243	O	THR	228	40.704	12.486	2.059	1.00	30.29	B	O
ATOM	1244	N	HIS	229	38.923	13.232	3.229	1.00	27.72	B	N
ATOM	1245	CA	HIS	229	39.562	13.128	4.525	1.00	27.44	B	C
ATOM	1246	CB	HIS	229	38.653	13.773	5.573	1.00	25.75	B	C
ATOM	1247	CG	HIS	229	39.267	13.858	6.936	1.00	26.14	B	C
ATOM	1248	CD2	HIS	229	39.884	14.883	7.572	1.00	23.57	B	C
ATOM	1249	ND1	HIS	229	39.261	12.801	7.821	1.00	23.19	B	N
ATOM	1250	CE1	HIS	229	39.846	13.174	8.945	1.00	25.43	B	C
ATOM	1251	NE2	HIS	229	40.232	14.432	8.820	1.00	23.55	B	N
ATOM	1252	C	HIS	229	39.841	11.661	4.895	1.00	29.45	B	C
ATOM	1253	O	HIS	229	40.891	11.345	5.477	1.00	29.48	B	O
ATOM	1254	N	LEU	230	38.914	10.765	4.553	1.00	29.61	B	N
ATOM	1255	CA	LEU	230	39.074	9.354	4.877	1.00	30.30	B	C
ATOM	1256	CB	LEU	230	37.769	8.605	4.682	1.00	31.34	B	C
ATOM	1257	CG	LEU	230	36.876	8.864	5.886	1.00	32.18	B	C
ATOM	1258	CD1	LEU	230	35.554	8.130	5.753	1.00	31.32	B	C
ATOM	1259	CD2	LEU	230	37.653	8.438	7.135	1.00	30.90	B	C
ATOM	1260	C	LEU	230	40.166	8.671	4.082	1.00	31.00	B	C
ATOM	1261	O	LEU	230	40.971	7.934	4.664	1.00	30.12	B	O
ATOM	1262	N	ALA	231	40.206	8.913	2.770	1.00	30.56	B	N
ATOM	1263	CA	ALA	231	41.387	8.543	1.975	1.00	31.98	B	C
ATOM	1264	CB	ALA	231	41.272	9.067	0.541	1.00	32.60	B	C
ATOM	1265	C	ALA	231	42.629	9.133	2.633	1.00	31.45	B	C
ATOM	1266	O	ALA	231	43.650	8.462	2.771	1.00	31.71	B	O
ATOM	1267	N	GLY	232	42.520	10.389	3.042	1.00	30.90	B	N
ATOM	1268	CA	GLY	232	43.612	11.045	3.717	1.00	33.63	B	C
ATOM	1269	C	GLY	232	44.108	10.305	4.953	1.00	35.98	B	C
ATOM	1270	O	GLY	232	45.328	10.284	5.231	1.00	35.65	B	O
ATOM	1271	N	VAL	233	43.195	9.705	5.717	1.00	35.53	B	N
ATOM	1272	CA	VAL	233	43.666	8.971	6.881	1.00	37.07	B	C
ATOM	1273	CB	VAL	233	42.533	8.704	7.908	1.00	35.57	B	C
ATOM	1274	CG1	VAL	233	43.009	7.758	8.968	1.00	32.92	B	C
ATOM	1275	CG2	VAL	233	42.113	10.001	8.582	1.00	34.02	B	C
ATOM	1276	C	VAL	233	44.294	7.647	6.440	1.00	37.64	B	C
ATOM	1277	O	VAL	233	45.170	7.120	7.102	1.00	39.28	B	O
ATOM	1278	N	VAL	234	43.875	7.103	5.313	1.00	38.29	B	N
ATOM	1279	CA	VAL	234	44.338	5.766	5.008	1.00	39.89	B	C
ATOM	1280	CB	VAL	234	43.514	5.068	3.886	1.00	36.19	B	C
ATOM	1281	CG1	VAL	234	44.048	3.637	3.661	1.00	33.10	B	C
ATOM	1282	CG2	VAL	234	42.055	5.024	4.258	1.00	34.67	B	C
ATOM	1283	C	VAL	234	45.776	5.855	4.558	1.00	43.08	B	C
ATOM	1284	O	VAL	234	46.623	5.070	4.997	1.00	43.79	B	O
ATOM	1285	N	SER	235	46.053	6.814	3.682	1.00	44.77	B	N
ATOM	1286	CA	SER	235	47.283	6.758	2.910	1.00	46.23	B	C
ATOM	1287	CB	SER	235	47.056	5.964	1.620	1.00	44.76	B	C
ATOM	1288	OG	SER	235	46.021	6.540	0.839	1.00	42.23	B	O
ATOM	1289	C	SER	235	47.784	8.152	2.590	1.00	48.21	B	C
ATOM	1290	O	SER	235	48.595	8.343	1.684	1.00	48.69	B	O

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ATOM   1291  N   GLY   236      47.304   9.130   3.345  1.00 49.94      B    N
ATOM   1292  CA  GLY   236      47.832  10.469   3.192  1.00 52.58      B    C
ATOM   1293  C   GLY   236      49.332  10.484   3.393  1.00 53.64      B    C
ATOM   1294  O   GLY   236      49.845   9.799   4.279  1.00 53.07      B    O
ATOM   1295  N   ARG   237      50.030  11.272   2.577  1.00 55.39      B    N
ATOM   1296  CA  ARG   237      51.495  11.329   2.611  1.00 56.99      B    C
ATOM   1297  CB  ARG   237      52.010  12.277   1.517  1.00 58.98      B    C
ATOM   1298  CG  ARG   237      52.163  11.617   0.149  1.00 64.90      B    C
ATOM   1299  CD  ARG   237      52.103  12.625  -0.988  1.00 70.94      B    C
ATOM   1300  NE  ARG   237      52.670  12.109  -2.229  1.00 78.50      B    N
ATOM   1301  CZ  ARG   237      51.961  11.550  -3.203  1.00 82.50      B    C
ATOM   1302  NH1 ARG   237      52.563  11.111  -4.299  1.00 86.46      B    N
ATOM   1303  NH2 ARG   237      50.653  11.425  -3.079  1.00 84.78      B    N
ATOM   1304  C   ARG   237      52.083  11.730   3.967  1.00 55.17      B    C
ATOM   1305  O   ARG   237      53.036  11.123   4.434  1.00 53.63      B    O
ATOM   1306  N   ASP   238      51.499  12.742   4.599  1.00 55.50      B    N
ATOM   1307  CA  ASP   238      52.045  13.309   5.831  1.00 53.79      B    C
ATOM   1308  CB  ASP   238      52.199  14.832   5.692  1.00 57.66      B    C
ATOM   1309  CG  ASP   238      53.374  15.241   4.779  1.00 61.12      B    C
ATOM   1310  OD1 ASP   238      54.346  14.462   4.622  1.00 60.35      B    O
ATOM   1311  OD2 ASP   238      53.323  16.362   4.219  1.00 63.48      B    O
ATOM   1312  C   ASP   238      51.199  13.008   7.063  1.00 50.51      B    C
ATOM   1313  O   ASP   238      51.606  13.315   8.178  1.00 50.36      B    O
ATOM   1314  N   ALA   239      50.022  12.425   6.857  1.00 47.11      B    N
ATOM   1315  CA  ALA   239      49.095  12.138   7.950  1.00 44.37      B    C
ATOM   1316  CB  ALA   239      48.060  13.257   8.077  1.00 38.70      B    C
ATOM   1317  C   ALA   239      48.394  10.798   7.734  1.00 44.34      B    C
ATOM   1318  O   ALA   239      47.540  10.399   8.524  1.00 44.60      B    O
ATOM   1319  N   GLY   240      48.751  10.109   6.656  1.00 44.64      B    N
ATOM   1320  CA  GLY   240      48.206   8.784   6.427  1.00 46.73      B    C
ATOM   1321  C   GLY   240      48.697   7.731   7.411  1.00 48.30      B    C
ATOM   1322  O   GLY   240      49.718   7.914   8.086  1.00 49.76      B    O
ATOM   1323  N   VAL   241      47.969   6.624   7.501  1.00 48.91      B    N
ATOM   1324  CA  VAL   241      48.395   5.502   8.323  1.00 50.59      B    C
ATOM   1325  CB  VAL   241      47.190   4.674   8.818  1.00 51.60      B    C
ATOM   1326  CG1 VAL   241      47.677   3.372   9.448  1.00 51.09      B    C
ATOM   1327  CG2 VAL   241      46.370   5.482   9.824  1.00 50.77      B    C
ATOM   1328  C   VAL   241      49.293   4.602   7.490  1.00 51.82      B    C
ATOM   1329  O   VAL   241      50.505   4.561   7.690  1.00 52.95      B    O
ATOM   1330  N   ALA   242      48.685   3.885   6.552  1.00 52.19      B    N
ATOM   1331  CA  ALA   242      49.427   3.079   5.596  1.00 53.00      B    C
ATOM   1332  CB  ALA   242      48.617   1.854   5.210  1.00 50.35      B    C
ATOM   1333  C   ALA   242      49.728   3.915   4.360  1.00 54.75      B    C
ATOM   1334  O   ALA   242      49.099   3.743   3.311  1.00 55.41      B    O
ATOM   1335  N   LYS   243      50.693   4.818   4.494  1.00 57.04      B    N
ATOM   1336  CA  LYS   243      51.026   5.750   3.427  1.00 59.49      B    C
ATOM   1337  CB  LYS   243      52.189   6.644   3.865  1.00 62.11      B    C
ATOM   1338  CG  LYS   243      52.031   7.180   5.285  1.00 64.29      B    C
ATOM   1339  CD  LYS   243      53.160   8.135   5.673  1.00 64.68      B    C
ATOM   1340  CE  LYS   243      52.959   8.684   7.088  1.00 65.19      B    C
ATOM   1341  NZ  LYS   243      54.113   9.505   7.542  1.00 65.01      B    N
ATOM   1342  C   LYS   243      51.400   4.993   2.158  1.00 60.19      B    C
ATOM   1343  O   LYS   243      52.058   3.951   2.211  1.00 60.85      B    O
ATOM   1344  N   GLY   244      50.970   5.509   1.013  1.00 59.50      B    N
ATOM   1345  CA  GLY   244      51.328   4.867  -0.238  1.00 58.54      B    C
ATOM   1346  C   GLY   244      50.309   3.847  -0.704  1.00 58.79      B    C
ATOM   1347  O   GLY   244      50.189   3.605  -1.908  1.00 59.80      B    O
ATOM   1348  N   ALA   245      49.571   3.254   0.235  1.00 56.96      B    N
ATOM   1349  CA  ALA   245      48.507   2.321  -0.116  1.00 53.85      B    C
ATOM   1350  CB  ALA   245      47.545   2.160   1.038  1.00 53.74      B    C
ATOM   1351  C   ALA   245      47.777   2.848  -1.340  1.00 51.91      B    C
ATOM   1352  O   ALA   245      47.669   4.055  -1.544  1.00 50.88      B    O
ATOM   1353  N   SER   246      47.292   1.929  -2.158  1.00 49.93      B    N
ATOM   1354  CA  SER   246      46.958   2.244  -3.534  1.00 48.39      B    C
ATOM   1355  CB  SER   246      47.694   1.276  -4.455  1.00 50.45      B    C
ATOM   1356  OG  SER   246      47.393   1.537  -5.808  1.00 55.36      B    O
ATOM   1357  C   SER   246      45.461   2.124  -3.737  1.00 46.93      B    C
ATOM   1358  O   SER   246      44.965   1.082  -4.167  1.00 46.77      B    O
ATOM   1359  N   MET   247      44.745   3.204  -3.444  1.00 46.10      B    N
ATOM   1360  CA  MET   247      43.304   3.138  -3.195  1.00 42.61      B    C
ATOM   1361  CB  MET   247      42.901   4.220  -2.210  1.00 41.03      B    C
ATOM   1362  CG  MET   247      43.382   3.946  -0.814  1.00 41.28      B    C
ATOM   1363  SD  MET   247      42.988   5.289   0.244  1.00 41.25      B    S
ATOM   1364  CE  MET   247      41.356   5.749  -0.392  1.00 44.40      B    C
ATOM   1365  C   MET   247      42.401   3.226  -4.401  1.00 40.94      B    C
ATOM   1366  O   MET   247      42.695   3.891  -5.385  1.00 40.67      B    O
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ATOM	1367	N	ARG	248	41.279	2.540	-4.305	1.00	40.61	B	N
ATOM	1368	CA	ARG	248	40.247	2.656	-5.312	1.00	42.13	B	C
ATOM	1369	CB	ARG	248	40.098	1.304	-6.012	1.00	46.07	B	C
ATOM	1370	CG	ARG	248	41.411	0.802	-6.591	1.00	52.02	B	C
ATOM	1371	CD	ARG	248	41.305	-0.609	-7.134	1.00	60.10	B	C
ATOM	1372	NE	ARG	248	41.744	-0.681	-8.524	1.00	68.77	B	N
ATOM	1373	CZ	ARG	248	40.919	-0.813	-9.560	1.00	74.48	B	C
ATOM	1374	NH1	ARG	248	41.407	-0.864	-10.795	1.00	78.20	B	N
ATOM	1375	NH2	ARG	248	39.606	-0.908	-9.364	1.00	76.74	B	N
ATOM	1376	C	ARG	248	38.950	3.083	-4.601	1.00	39.77	B	C
ATOM	1377	O	ARG	248	38.554	2.480	-3.609	1.00	40.40	B	O
ATOM	1378	N	SER	249	38.297	4.136	-5.073	1.00	35.62	B	N
ATOM	1379	CA	SER	249	37.070	4.561	-4.404	1.00	31.39	B	C
ATOM	1380	CB	SER	249	37.144	6.027	-3.983	1.00	28.56	B	C
ATOM	1381	OG	SER	249	36.827	6.873	-5.066	1.00	27.85	B	O
ATOM	1382	C	SER	249	35.844	4.362	-5.272	1.00	28.48	B	C
ATOM	1383	O	SER	249	35.908	4.501	-6.498	1.00	27.14	B	O
ATOM	1384	N	LEU	250	34.740	4.019	-4.612	1.00	25.37	B	N
ATOM	1385	CA	LEU	250	33.421	3.919	-5.234	1.00	25.79	B	C
ATOM	1386	CB	LEU	250	32.789	2.544	-4.928	1.00	26.82	B	C
ATOM	1387	CG	LEU	250	33.376	1.311	-5.646	1.00	27.29	B	C
ATOM	1388	CD1	LEU	250	34.903	1.214	-5.464	1.00	25.27	B	C
ATOM	1389	CD2	LEU	250	32.710	0.065	-5.115	1.00	28.81	B	C
ATOM	1390	C	LEU	250	32.597	5.013	-4.585	1.00	24.78	B	C
ATOM	1391	O	LEU	250	32.872	5.387	-3.439	1.00	27.07	B	O
ATOM	1392	N	ARG	251	31.599	5.539	-5.285	1.00	22.58	B	N
ATOM	1393	CA	ARG	251	30.750	6.566	-4.664	1.00	20.82	B	C
ATOM	1394	CB	ARG	251	30.669	7.787	-5.554	1.00	18.39	B	C
ATOM	1395	CG	ARG	251	30.297	9.005	-4.774	1.00	20.45	B	C
ATOM	1396	CD	ARG	251	29.335	9.883	-5.561	1.00	21.67	B	C
ATOM	1397	NE	ARG	251	28.997	11.093	-4.839	1.00	19.94	B	N
ATOM	1398	CZ	ARG	251	28.209	12.031	-5.331	1.00	22.92	B	C
ATOM	1399	NH1	ARG	251	27.697	11.877	-6.542	1.00	22.45	B	N
ATOM	1400	NH2	ARG	251	27.919	13.114	-4.610	1.00	28.30	B	N
ATOM	1401	C	ARG	251	29.329	6.124	-4.295	1.00	20.66	B	C
ATOM	1402	O	ARG	251	28.442	6.030	-5.156	1.00	16.50	B	O
ATOM	1403	N	VAL	252	29.127	5.875	-3.000	1.00	21.54	B	N
ATOM	1404	CA	VAL	252	27.852	5.381	-2.482	1.00	21.20	B	C
ATOM	1405	CB	VAL	252	27.993	4.033	-1.688	1.00	19.63	B	C
ATOM	1406	CG1	VAL	252	28.692	3.016	-2.525	1.00	17.44	B	C
ATOM	1407	CG2	VAL	252	28.721	4.248	-0.374	1.00	18.14	B	C
ATOM	1408	C	VAL	252	27.199	6.384	-1.552	1.00	21.35	B	C
ATOM	1409	O	VAL	252	26.128	6.119	-1.029	1.00	24.50	B	O
ATOM	1410	N	LEU	253	27.840	7.522	-1.333	1.00	20.92	B	N
ATOM	1411	CA	LEU	253	27.232	8.594	-0.550	1.00	20.41	B	C
ATOM	1412	CB	LEU	253	28.058	8.861	0.698	1.00	19.82	B	C
ATOM	1413	CG	LEU	253	28.172	7.724	1.711	1.00	22.59	B	C
ATOM	1414	CD1	LEU	253	28.840	8.270	2.980	1.00	21.86	B	C
ATOM	1415	CD2	LEU	253	26.769	7.150	2.020	1.00	21.15	B	C
ATOM	1416	C	LEU	253	27.099	9.896	-1.334	1.00	20.52	B	C
ATOM	1417	O	LEU	253	28.061	10.350	-1.956	1.00	19.48	B	O
ATOM	1418	N	ASN	254	25.924	10.516	-1.303	1.00	21.23	B	N
ATOM	1419	CA	ASN	254	25.798	11.814	-1.964	1.00	23.98	B	C
ATOM	1420	CB	ASN	254	24.346	12.110	-2.349	1.00	26.23	B	C
ATOM	1421	CG	ASN	254	23.416	12.164	-1.157	1.00	25.36	B	C
ATOM	1422	OD1	ASN	254	23.809	12.505	-0.039	1.00	23.00	B	O
ATOM	1423	ND2	ASN	254	22.161	11.823	-1.398	1.00	28.55	B	N
ATOM	1424	C	ASN	254	26.339	12.941	-1.102	1.00	25.22	B	C
ATOM	1425	O	ASN	254	26.926	12.700	-0.028	1.00	24.34	B	O
ATOM	1426	N	CYS	255	26.151	14.171	-1.571	1.00	25.88	B	N
ATOM	1427	CA	CYS	255	26.802	15.302	-0.916	1.00	28.48	B	C
ATOM	1428	C	CYS	255	26.204	15.465	0.466	1.00	29.01	B	C
ATOM	1429	O	CYS	255	26.793	16.101	1.330	1.00	30.18	B	O
ATOM	1430	CB	CYS	255	26.629	16.588	-1.724	1.00	28.76	B	C
ATOM	1431	SG	CYS	255	27.276	16.517	-3.442	1.00	36.42	B	S
ATOM	1432	N	GLN	256	25.033	14.879	0.685	1.00	28.37	B	N
ATOM	1433	CA	GLN	256	24.396	15.027	1.973	1.00	28.98	B	C
ATOM	1434	CB	GLN	256	22.874	15.122	1.820	1.00	28.59	B	C
ATOM	1435	CG	GLN	256	22.359	16.549	2.025	1.00	27.47	B	C
ATOM	1436	CD	GLN	256	21.063	16.820	1.300	1.00	25.99	B	C
ATOM	1437	OE1	GLN	256	20.388	15.895	0.843	1.00	27.71	B	O
ATOM	1438	NE2	GLN	256	20.710	18.088	1.182	1.00	21.77	B	N
ATOM	1439	C	GLN	256	24.767	13.893	2.901	1.00	28.76	B	C
ATOM	1440	O	GLN	256	24.233	13.796	4.005	1.00	28.16	B	O
ATOM	1441	N	GLY	257	25.690	13.045	2.447	1.00	29.54	B	N
ATOM	1442	CA	GLY	257	26.200	11.964	3.280	1.00	28.50	B	C

ATOM	1443	C	GLY	257	25.263	10.774	3.347	1.00	29.00	B	C
ATOM	1444	O	GLY	257	25.513	9.795	4.060	1.00	27.09	B	O
ATOM	1445	N	LYS	258	24.169	10.872	2.600	1.00	30.82	B	N
ATOM	1446	CA	LYS	258	23.143	9.844	2.595	1.00	31.63	B	C
ATOM	1447	CB	LYS	258	21.757	10.497	2.455	1.00	32.83	B	C
ATOM	1448	CG	LYS	258	20.572	9.539	2.594	1.00	35.03	B	C
ATOM	1449	CD	LYS	258	19.575	10.016	3.632	1.00	33.55	B	C
ATOM	1450	CE	LYS	258	18.826	11.265	3.169	1.00	38.29	B	C
ATOM	1451	NZ	LYS	258	17.669	10.963	2.256	1.00	33.52	B	N
ATOM	1452	C	LYS	258	23.420	8.904	1.433	1.00	30.72	B	C
ATOM	1453	O	LYS	258	23.941	9.323	0.390	1.00	31.26	B	O
ATOM	1454	N	GLY	259	23.089	7.633	1.627	1.00	28.86	B	N
ATOM	1455	CA	GLY	259	23.292	6.635	0.586	1.00	28.66	B	C
ATOM	1456	C	GLY	259	22.214	5.590	0.739	1.00	27.16	B	C
ATOM	1457	O	GLY	259	21.327	5.774	1.556	1.00	29.64	B	O
ATOM	1458	N	THR	260	22.263	4.499	-0.010	1.00	25.94	B	N
ATOM	1459	CA	THR	260	21.243	3.470	0.174	1.00	24.06	B	C
ATOM	1460	CB	THR	260	20.185	3.497	-0.956	1.00	23.07	B	C
ATOM	1461	OG1	THR	260	20.716	2.860	-2.120	1.00	23.27	B	O
ATOM	1462	CG2	THR	260	19.803	4.929	-1.294	1.00	23.82	B	C
ATOM	1463	C	THR	260	21.803	2.059	0.254	1.00	23.68	B	C
ATOM	1464	O	THR	260	22.853	1.774	-0.299	1.00	23.66	B	O
ATOM	1465	N	VAL	261	21.083	1.174	0.938	1.00	24.37	B	N
ATOM	1466	CA	VAL	261	21.509	-0.201	1.075	1.00	24.48	B	C
ATOM	1467	CB	VAL	261	20.511	-1.049	1.868	1.00	24.12	B	C
ATOM	1468	CG1	VAL	261	20.950	-2.486	1.814	1.00	22.98	B	C
ATOM	1469	CG2	VAL	261	20.445	-0.589	3.307	1.00	26.24	B	C
ATOM	1470	C	VAL	261	21.664	-0.856	-0.276	1.00	25.55	B	C
ATOM	1471	O	VAL	261	22.598	-1.631	-0.476	1.00	25.67	B	O
ATOM	1472	N	SER	262	20.754	-0.560	-1.202	1.00	25.26	B	N
ATOM	1473	CA	SER	262	20.823	-1.198	-2.510	1.00	28.13	B	C
ATOM	1474	CB	SER	262	19.559	-0.928	-3.301	1.00	26.07	B	C
ATOM	1475	OG	SER	262	19.262	0.447	-3.272	1.00	30.83	B	O
ATOM	1476	C	SER	262	22.038	-0.704	-3.293	1.00	30.74	B	C
ATOM	1477	O	SER	262	22.734	-1.485	-3.974	1.00	30.74	B	O
ATOM	1478	N	GLY	263	22.296	0.594	-3.172	1.00	32.08	B	N
ATOM	1479	CA	GLY	263	23.413	1.196	-3.876	1.00	34.48	B	C
ATOM	1480	C	GLY	263	24.735	0.711	-3.328	1.00	35.11	B	C
ATOM	1481	O	GLY	263	25.684	0.517	-4.075	1.00	36.07	B	O
ATOM	1482	N	THR	264	24.801	0.514	-2.019	1.00	34.36	B	N
ATOM	1483	CA	THR	264	26.023	0.040	-1.409	1.00	34.13	B	C
ATOM	1484	CB	THR	264	25.886	-0.023	0.126	1.00	32.04	B	C
ATOM	1485	OG1	THR	264	25.904	1.301	0.657	1.00	29.99	B	O
ATOM	1486	CG2	THR	264	27.019	-0.816	0.741	1.00	30.83	B	C
ATOM	1487	C	THR	264	26.216	-1.361	-1.942	1.00	36.25	B	C
ATOM	1488	O	THR	264	27.305	-1.749	-2.384	1.00	36.88	B	O
ATOM	1489	N	LEU	265	25.122	-2.112	-1.900	1.00	36.49	B	N
ATOM	1490	CA	LEU	265	25.119	-3.489	-2.338	1.00	36.94	B	C
ATOM	1491	CB	LEU	265	23.682	-3.980	-2.408	1.00	38.26	B	C
ATOM	1492	CG	LEU	265	23.306	-5.152	-1.522	1.00	36.02	B	C
ATOM	1493	CD1	LEU	265	21.836	-5.460	-1.766	1.00	37.13	B	C
ATOM	1494	CD2	LEU	265	24.178	-6.351	-1.857	1.00	36.13	B	C
ATOM	1495	C	LEU	265	25.773	-3.583	-3.711	1.00	36.28	B	C
ATOM	1496	O	LEU	265	26.781	-4.256	-3.885	1.00	36.69	B	O
ATOM	1497	N	ILE	266	25.196	-2.891	-4.683	1.00	36.29	B	N
ATOM	1498	CA	ILE	266	25.706	-2.929	-6.044	1.00	35.45	B	C
ATOM	1499	CB	ILE	266	24.879	-1.982	-6.950	1.00	31.67	B	C
ATOM	1500	CG2	ILE	266	25.385	-2.047	-8.363	1.00	29.36	B	C
ATOM	1501	CG1	ILE	266	23.390	-2.379	-6.899	1.00	31.50	B	C
ATOM	1502	CD1	ILE	266	22.469	-1.530	-7.756	1.00	25.14	B	C
ATOM	1503	C	ILE	266	27.197	-2.546	-6.067	1.00	37.49	B	C
ATOM	1504	O	ILE	266	27.964	-3.033	-6.904	1.00	37.39	B	O
ATOM	1505	N	GLY	267	27.612	-1.694	-5.134	1.00	37.97	B	N
ATOM	1506	CA	GLY	267	29.013	-1.332	-5.061	1.00	38.87	B	C
ATOM	1507	C	GLY	267	29.894	-2.504	-4.644	1.00	41.23	B	C
ATOM	1508	O	GLY	267	31.043	-2.618	-5.086	1.00	42.31	B	O
ATOM	1509	N	LEU	268	29.367	-3.375	-3.787	1.00	41.65	B	N
ATOM	1510	CA	LEU	268	30.122	-4.524	-3.298	1.00	42.08	B	C
ATOM	1511	CB	LEU	268	29.424	-5.170	-2.095	1.00	42.22	B	C
ATOM	1512	CG	LEU	268	29.354	-4.290	-0.844	1.00	43.99	B	C
ATOM	1513	CD1	LEU	268	28.426	-4.921	0.173	1.00	43.26	B	C
ATOM	1514	CD2	LEU	268	30.756	-4.085	-0.276	1.00	42.42	B	C
ATOM	1515	C	LEU	268	30.204	-5.529	-4.416	1.00	43.00	B	C
ATOM	1516	O	LEU	268	31.120	-6.352	-4.451	1.00	41.06	B	O
ATOM	1517	N	GLU	269	29.238	-5.460	-5.331	1.00	43.87	B	N
ATOM	1518	CA	GLU	269	29.213	-6.378	-6.459	1.00	46.33	B	C

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ATOM   1519  CB  GLU   269      27.818  -6.445  -7.064  1.00 43.85      B    C
ATOM   1520  CG  GLU   269      27.622  -7.621  -7.999  1.00 42.78      B    C
ATOM   1521  CD  GLU   269      26.619  -7.328  -9.103  1.00 43.42      B    C
ATOM   1522  OE1 GLU   269      25.667  -6.554  -8.869  1.00 42.07      B    O
ATOM   1523  OE2 GLU   269      26.788  -7.873 -10.214  1.00 45.39      B    O
ATOM   1524  C   GLU   269      30.220  -5.929  -7.517  1.00 48.39      B    C
ATOM   1525  O   GLU   269      30.919  -6.754  -8.110  1.00 49.72      B    O
ATOM   1526  N   PHE   270      30.297  -4.619  -7.739  1.00 49.23      B    N
ATOM   1527  CA  PHE   270      31.364  -4.030  -8.538  1.00 48.36      B    C
ATOM   1528  CB  PHE   270      31.211  -2.505  -8.522  1.00 47.34      B    C
ATOM   1529  CG  PHE   270      32.293  -1.761  -9.257  1.00 48.28      B    C
ATOM   1530  CD1 PHE   270      32.085  -1.306 -10.552  1.00 48.57      B    C
ATOM   1531  CD2 PHE   270      33.504  -1.475  -8.641  1.00 46.97      B    C
ATOM   1532  CE1 PHE   270      33.059  -0.581 -11.217  1.00 46.26      B    C
ATOM   1533  CE2 PHE   270      34.479  -0.752  -9.302  1.00 47.34      B    C
ATOM   1534  CZ  PHE   270      34.254  -0.306 -10.591  1.00 47.47      B    C
ATOM   1535  C   PHE   270      32.730  -4.454  -7.976  1.00 48.75      B    C
ATOM   1536  O   PHE   270      33.635  -4.802  -8.727  1.00 48.85      B    O
ATOM   1537  N   ILE   271      32.882  -4.442  -6.658  1.00 49.09      B    N
ATOM   1538  CA  ILE   271      34.162  -4.801  -6.071  1.00 51.75      B    C
ATOM   1539  CB  ILE   271      34.193  -4.501  -4.566  1.00 52.01      B    C
ATOM   1540  CG2 ILE   271      35.275  -5.324  -3.886  1.00 49.86      B    C
ATOM   1541  CG1 ILE   271      34.422  -3.005  -4.346  1.00 52.71      B    C
ATOM   1542  CD1 ILE   271      34.765  -2.638  -2.916  1.00 54.18      B    C
ATOM   1543  C   ILE   271      34.484  -6.272  -6.291  1.00 54.91      B    C
ATOM   1544  O   ILE   271      35.629  -6.627  -6.577  1.00 54.18      B    O
ATOM   1545  N   ARG   272      33.467  -7.121  -6.164  1.00 58.06      B    N
ATOM   1546  CA  ARG   272      33.610  -8.557  -6.376  1.00 60.91      B    C
ATOM   1547  CB  ARG   272      32.333  -9.274  -5.934  1.00 62.27      B    C
ATOM   1548  CG  ARG   272      32.265 -10.749  -6.317  1.00 62.63      B    C
ATOM   1549  CD  ARG   272      33.258 -11.598  -5.531  1.00 62.94      B    C
ATOM   1550  NE  ARG   272      33.136 -13.000  -5.914  1.00 66.12      B    N
ATOM   1551  CZ  ARG   272      34.131 -13.878  -5.876  1.00 67.67      B    C
ATOM   1552  NH1 ARG   272      33.923 -15.132  -6.252  1.00 67.95      B    N
ATOM   1553  NH2 ARG   272      35.329 -13.503  -5.456  1.00 69.21      B    N
ATOM   1554  C   ARG   272      33.870  -8.846  -7.847  1.00 62.21      B    C
ATOM   1555  O   ARG   272      34.764  -9.616  -8.196  1.00 63.03      B    O
ATOM   1556  N   LYS   273      33.074  -8.221  -8.701  1.00 62.61      B    N
ATOM   1557  CA  LYS   273      33.251  -8.323 -10.132  1.00 64.08      B    C
ATOM   1558  CB  LYS   273      32.341  -7.313 -10.825  1.00 64.38      B    C
ATOM   1559  CG  LYS   273      32.239  -7.493 -12.320  1.00 67.49      B    C
ATOM   1560  CD  LYS   273      31.427  -8.739 -12.660  1.00 73.19      B    C
ATOM   1561  CE  LYS   273      29.976  -8.594 -12.216  1.00 75.81      B    C
ATOM   1562  NZ  LYS   273      29.238  -7.554 -13.000  1.00 81.17      B    N
ATOM   1563  C   LYS   273      34.708  -8.048 -10.482  1.00 65.41      B    C
ATOM   1564  O   LYS   273      35.328  -8.792 -11.229  1.00 66.02      B    O
ATOM   1565  N   SER   274      35.253  -6.974  -9.925  1.00 68.14      B    N
ATOM   1566  CA  SER   274      36.656  -6.628 -10.118  1.00 69.59      B    C
ATOM   1567  CB  SER   274      37.015  -5.384  -9.310  1.00 67.55      B    C
ATOM   1568  OG  SER   274      36.241  -4.284  -9.727  1.00 67.09      B    O
ATOM   1569  C   SER   274      37.551  -7.764  -9.670  1.00 71.55      B    C
ATOM   1570  O   SER   274      38.246  -8.373 -10.475  1.00 72.19      B    O
ATOM   1571  N   GLN   275      37.525  -8.040  -8.372  1.00 74.22      B    N
ATOM   1572  CA  GLN   275      38.417  -9.023  -7.777  1.00 77.85      B    C
ATOM   1573  CB  GLN   275      37.936  -9.379  -6.369  1.00 76.85      B    C
ATOM   1574  CG  GLN   275      38.908 -10.221  -5.574  1.00 76.18      B    C
ATOM   1575  CD  GLN   275      38.196 -11.209  -4.675  1.00 76.76      B    C
ATOM   1576  OE1 GLN   275      37.049 -11.572  -4.928  1.00 77.71      B    O
ATOM   1577  NE2 GLN   275      38.870 -11.648  -3.619  1.00 76.78      B    N
ATOM   1578  C   GLN   275      38.524 -10.289  -8.629  1.00 80.71      B    C
ATOM   1579  O   GLN   275      39.545 -10.967  -8.606  1.00 80.41      B    O
ATOM   1580  N   LEU   276      37.481 -10.602  -9.388  1.00 84.76      B    N
ATOM   1581  CA  LEU   276      37.564 -11.713 -10.324  1.00 89.24      B    C
ATOM   1582  CB  LEU   276      36.204 -11.978 -10.971  1.00 87.78      B    C
ATOM   1583  CG  LEU   276      35.112 -12.504 -10.039  1.00 87.27      B    C
ATOM   1584  CD1 LEU   276      33.844 -12.767 -10.833  1.00 85.86      B    C
ATOM   1585  CD2 LEU   276      35.591 -13.768  -9.351  1.00 85.57      B    C
ATOM   1586  C   LEU   276      38.598 -11.420 -11.405  1.00 92.06      B    C
ATOM   1587  O   LEU   276      39.735 -11.884 -11.324  1.00 94.30      B    O
ATOM   1588  N   VAL   277      38.206 -10.638 -12.406  1.00 94.47      B    N
ATOM   1589  CA  VAL   277      39.058 -10.389 -13.567  1.00 96.12      B    C
ATOM   1590  CB  VAL   277      38.306  -9.555 -14.652  1.00 95.15      B    C
ATOM   1591  CG1 VAL   277      37.071 -10.292 -15.118  1.00 93.14      B    C
ATOM   1592  CG2 VAL   277      37.928  -8.196 -14.109  1.00 93.32      B    C
ATOM   1593  C   VAL   277      40.378  -9.686 -13.222  1.00 97.93      B    C
ATOM   1594  O   VAL   277      41.159  -9.353 -14.107  1.00 97.39      B    O
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ATOM   1595  N   GLN   278      40.630  -9.467 -11.939  1.00101.32      B    N
ATOM   1596  CA  GLN   278      41.830  -8.754 -11.522  1.00105.97      B    C
ATOM   1597  CB  GLN   278      41.490  -7.782 -10.392  1.00105.35      B    C
ATOM   1598  CG  GLN   278      41.943  -6.352 -10.628  1.00103.69      B    C
ATOM   1599  CD  GLN   278      41.433  -5.404  -9.557  1.00102.60      B    C
ATOM   1600  OE1 GLN   278      41.461  -4.182  -9.726  1.00101.28      B    O
ATOM   1601  NE2 GLN   278      40.959  -5.965  -8.447  1.00100.13      B    N
ATOM   1602  C   GLN   278      42.909  -9.723 -11.057  1.00108.32      B    C
ATOM   1603  O   GLN   278      42.614 -10.809 -10.563  1.00109.28      B    O
ATOM   1604  N   PRO   279      44.181  -9.335 -11.206  1.00109.09      B    N
ATOM   1605  CD  PRO   279      44.637  -8.017 -11.676  1.00107.47      B    C
ATOM   1606  CA  PRO   279      45.300 -10.176 -10.768  1.00110.86      B    C
ATOM   1607  CB  PRO   279      46.530  -9.402 -11.226  1.00107.87      B    C
ATOM   1608  CG  PRO   279      46.078  -7.984 -11.247  1.00106.50      B    C
ATOM   1609  C   PRO   279      45.271 -10.355  -9.257  1.00111.43      B    C
ATOM   1610  O   PRO   279      44.978  -9.413  -8.520  1.00113.76      B    O
ATOM   1611  N   VAL   280      45.588 -11.564  -8.804  1.00110.51      B    N
ATOM   1612  CA  VAL   280      45.386 -11.947  -7.411  1.00109.51      B    C
ATOM   1613  CB  VAL   280      45.741 -13.435  -7.179  1.00111.61      B    C
ATOM   1614  CG1 VAL   280      44.843 -14.319  -8.025  1.00112.81      B    C
ATOM   1615  CG2 VAL   280      47.198 -13.688  -7.524  1.00113.25      B    C
ATOM   1616  C   VAL   280      46.188 -11.099  -6.434  1.00106.06      B    C
ATOM   1617  O   VAL   280      47.391 -10.925  -6.583  1.00106.05      B    O
ATOM   1618  N   GLY   281      45.502 -10.572  -5.429  1.00102.30      B    N
ATOM   1619  CA  GLY   281      46.161  -9.771  -4.420  1.00 96.08      B    C
ATOM   1620  C   GLY   281      45.214  -9.508  -3.272  1.00 90.39      B    C
ATOM   1621  O   GLY   281      44.008  -9.683  -3.415  1.00 91.92      B    O
ATOM   1622  N   PRO   282      45.731  -9.088  -2.114  1.00 85.97      B    N
ATOM   1623  CD  PRO   282      47.160  -8.858  -1.846  1.00 87.84      B    C
ATOM   1624  CA  PRO   282      44.896  -8.825  -0.937  1.00 80.46      B    C
ATOM   1625  CB  PRO   282      45.908  -8.715   0.199  1.00 84.08      B    C
ATOM   1626  CG  PRO   282      47.160  -8.263  -0.471  1.00 87.49      B    C
ATOM   1627  C   PRO   282      44.049  -7.556  -1.086  1.00 74.39      B    C
ATOM   1628  O   PRO   282      44.553  -6.508  -1.516  1.00 72.54      B    O
ATOM   1629  N   LEU   283      42.767  -7.655  -0.730  1.00 68.07      B    N
ATOM   1630  CA  LEU   283      41.861  -6.508  -0.783  1.00 61.93      B    C
ATOM   1631  CB  LEU   283      40.682  -6.782  -1.726  1.00 60.52      B    C
ATOM   1632  CG  LEU   283      41.009  -7.186  -3.163  1.00 60.95      B    C
ATOM   1633  CD1 LEU   283      39.834  -6.834  -4.064  1.00 60.01      B    C
ATOM   1634  CD2 LEU   283      42.266  -6.475  -3.631  1.00 62.63      B    C
ATOM   1635  C   LEU   283      41.315  -6.118   0.585  1.00 57.20      B    C
ATOM   1636  O   LEU   283      40.773  -6.943   1.316  1.00 54.88      B    O
ATOM   1637  N   VAL   284      41.472  -4.844   0.919  1.00 52.54      B    N
ATOM   1638  CA  VAL   284      40.759  -4.245   2.037  1.00 47.36      B    C
ATOM   1639  CB  VAL   284      41.674  -3.304   2.846  1.00 45.36      B    C
ATOM   1640  CG1 VAL   284      40.929  -2.737   4.029  1.00 45.93      B    C
ATOM   1641  CG2 VAL   284      42.887  -4.050   3.322  1.00 42.54      B    C
ATOM   1642  C   VAL   284      39.591  -3.440   1.473  1.00 44.41      B    C
ATOM   1643  O   VAL   284      39.694  -2.814   0.419  1.00 44.27      B    O
ATOM   1644  N   VAL   285      38.465  -3.472   2.166  1.00 41.51      B    N
ATOM   1645  CA  VAL   285      37.341  -2.636   1.769  1.00 38.92      B    C
ATOM   1646  CB  VAL   285      36.171  -3.503   1.299  1.00 37.13      B    C
ATOM   1647  CG1 VAL   285      35.051  -2.645   0.775  1.00 35.52      B    C
ATOM   1648  CG2 VAL   285      36.660  -4.442   0.240  1.00 36.78      B    C
ATOM   1649  C   VAL   285      36.935  -1.794   2.975  1.00 35.14      B    C
ATOM   1650  O   VAL   285      36.583  -2.329   4.033  1.00 36.12      B    O
ATOM   1651  N   LEU   286      37.024  -0.480   2.835  1.00 29.16      B    N
ATOM   1652  CA  LEU   286      36.689   0.388   3.943  1.00 27.92      B    C
ATOM   1653  CB  LEU   286      37.665   1.552   4.026  1.00 24.63      B    C
ATOM   1654  CG  LEU   286      37.299   2.689   4.975  1.00 23.37      B    C
ATOM   1655  CD1 LEU   286      37.193   2.208   6.431  1.00 21.39      B    C
ATOM   1656  CD2 LEU   286      38.360   3.758   4.829  1.00 23.59      B    C
ATOM   1657  C   LEU   286      35.278   0.908   3.742  1.00 28.41      B    C
ATOM   1658  O   LEU   286      34.984   1.517   2.714  1.00 29.12      B    O
ATOM   1659  N   LEU   287      34.414   0.663   4.726  1.00 28.37      B    N
ATOM   1660  CA  LEU   287      32.998   1.003   4.635  1.00 28.51      B    C
ATOM   1661  CB  LEU   287      32.175  -0.275   4.784  1.00 32.94      B    C
ATOM   1662  CG  LEU   287      32.022  -1.197   3.572  1.00 36.53      B    C
ATOM   1663  CD1 LEU   287      31.746  -2.615   4.052  1.00 37.57      B    C
ATOM   1664  CD2 LEU   287      30.878  -0.692   2.667  1.00 37.50      B    C
ATOM   1665  C   LEU   287      32.560   2.022   5.701  1.00 26.32      B    C
ATOM   1666  O   LEU   287      31.825   1.682   6.636  1.00 25.55      B    O
ATOM   1667  N   PRO   288      32.989   3.285   5.564  1.00 25.64      B    N
ATOM   1668  CD  PRO   288      33.477   3.896   4.314  1.00 26.22      B    C
ATOM   1669  CA  PRO   288      32.781   4.299   6.603  1.00 25.01      B    C
ATOM   1670  CB  PRO   288      33.736   5.411   6.196  1.00 25.67      B    C
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ATOM   1671  CG  PRO   288      33.688   5.361   4.683  1.00 24.95      B    C
ATOM   1672  C   PRO   288      31.336   4.799   6.659  1.00 24.78      B    C
ATOM   1673  O   PRO   288      31.099   6.009   6.677  1.00 24.06      B    O
ATOM   1674  N   LEU   289      30.381   3.871   6.682  1.00 24.21      B    N
ATOM   1675  CA  LEU   289      28.961   4.213   6.708  1.00 24.93      B    C
ATOM   1676  CB  LEU   289      28.414   4.234   5.277  1.00 21.80      B    C
ATOM   1677  CG  LEU   289      28.726   2.999   4.424  1.00 21.73      B    C
ATOM   1678  CD1 LEU   289      27.882   1.824   4.854  1.00 22.83      B    C
ATOM   1679  CD2 LEU   289      28.461   3.318   2.970  1.00 21.63      B    C
ATOM   1680  C   LEU   289      28.165   3.210   7.557  1.00 25.83      B    C
ATOM   1681  O   LEU   289      28.615   2.087   7.787  1.00 26.10      B    O
ATOM   1682  N   ALA   290      26.987   3.613   8.022  1.00 26.31      B    N
ATOM   1683  CA  ALA   290      26.088   2.683   8.709  1.00 25.80      B    C
ATOM   1684  CB  ALA   290      26.142   2.912  10.220  1.00 22.49      B    C
ATOM   1685  C   ALA   290      24.658   2.860   8.220  1.00 27.47      B    C
ATOM   1686  O   ALA   290      24.266   3.938   7.756  1.00 26.91      B    O
ATOM   1687  N   GLY   291      23.881   1.789   8.327  1.00 29.54      B    N
ATOM   1688  CA  GLY   291      22.435   1.910   8.311  1.00 30.47      B    C
ATOM   1689  C   GLY   291      21.837   1.040   9.397  1.00 31.26      B    C
ATOM   1690  O   GLY   291      22.557   0.577  10.275  1.00 31.62      B    O
ATOM   1691  N   GLY   292      20.530   0.801   9.340  1.00 33.20      B    N
ATOM   1692  CA  GLY   292      19.939  -0.177  10.239  1.00 31.71      B    C
ATOM   1693  C   GLY   292      20.446  -1.550   9.851  1.00 32.14      B    C
ATOM   1694  O   GLY   292      20.856  -1.719   8.707  1.00 31.02      B    O
ATOM   1695  N   TYR   293      20.437  -2.508  10.784  1.00 33.24      B    N
ATOM   1696  CA  TYR   293      20.782  -3.900  10.476  1.00 33.89      B    C
ATOM   1697  CB  TYR   293      20.391  -4.856  11.627  1.00 36.33      B    C
ATOM   1698  CG  TYR   293      20.208  -6.306  11.192  1.00 37.79      B    C
ATOM   1699  CD1 TYR   293      21.258  -7.219  11.258  1.00 38.75      B    C
ATOM   1700  CE1 TYR   293      21.117  -8.501  10.764  1.00 38.29      B    C
ATOM   1701  CD2 TYR   293      19.008  -6.730  10.631  1.00 38.47      B    C
ATOM   1702  CE2 TYR   293      18.853  -7.998  10.139  1.00 37.87      B    C
ATOM   1703  CZ  TYR   293      19.905  -8.884  10.200  1.00 40.01      B    C
ATOM   1704  OH  TYR   293      19.731 -10.145   9.667  1.00 40.12      B    O
ATOM   1705  C   TYR   293      20.064  -4.318   9.208  1.00 34.23      B    C
ATOM   1706  O   TYR   293      18.855  -4.168   9.090  1.00 32.68      B    O
ATOM   1707  N   SER   294      20.831  -4.825   8.252  1.00 36.49      B    N
ATOM   1708  CA  SER   294      20.296  -5.257   6.971  1.00 37.92      B    C
ATOM   1709  CB  SER   294      20.802  -4.365   5.842  1.00 37.02      B    C
ATOM   1710  OG  SER   294      20.222  -4.748   4.601  1.00 36.27      B    O
ATOM   1711  C   SER   294      20.785  -6.666   6.730  1.00 40.68      B    C
ATOM   1712  O   SER   294      21.995  -6.919   6.637  1.00 39.86      B    O
ATOM   1713  N   ARG   295      19.848  -7.593   6.621  1.00 43.03      B    N
ATOM   1714  CA  ARG   295      20.250  -8.969   6.436  1.00 44.95      B    C
ATOM   1715  CB  ARG   295      19.035  -9.900   6.559  1.00 46.57      B    C
ATOM   1716  CG  ARG   295      18.604 -10.555   5.276  1.00 49.25      B    C
ATOM   1717  CD  ARG   295      18.893 -12.030   5.331  1.00 51.43      B    C
ATOM   1718  NE  ARG   295      17.661 -12.797   5.434  1.00 54.06      B    N
ATOM   1719  CZ  ARG   295      17.620 -14.104   5.653  1.00 54.98      B    C
ATOM   1720  NH1 ARG   295      18.751 -14.786   5.790  1.00 56.63      B    N
ATOM   1721  NH2 ARG   295      16.449 -14.722   5.733  1.00 55.08      B    N
ATOM   1722  C   ARG   295      20.925  -9.084   5.069  1.00 43.35      B    C
ATOM   1723  O   ARG   295      21.975  -9.718   4.948  1.00 44.39      B    O
ATOM   1724  N   VAL   296      20.353  -8.446   4.053  1.00 40.22      B    N
ATOM   1725  CA  VAL   296      20.917  -8.555   2.715  1.00 41.05      B    C
ATOM   1726  CB  VAL   296      20.026  -7.833   1.653  1.00 41.81      B    C
ATOM   1727  CG1 VAL   296      19.931  -6.339   1.964  1.00 43.65      B    C
ATOM   1728  CG2 VAL   296      20.590  -8.056   0.251  1.00 41.55      B    C
ATOM   1729  C   VAL   296      22.342  -7.981   2.665  1.00 41.93      B    C
ATOM   1730  O   VAL   296      23.240  -8.588   2.058  1.00 40.42      B    O
ATOM   1731  N   LEU   297      22.555  -6.833   3.317  1.00 40.51      B    N
ATOM   1732  CA  LEU   297      23.873  -6.198   3.334  1.00 39.85      B    C
ATOM   1733  CB  LEU   297      23.808  -4.809   3.992  1.00 36.62      B    C
ATOM   1734  CG  LEU   297      25.093  -3.965   4.013  1.00 33.08      B    C
ATOM   1735  CD1 LEU   297      25.497  -3.593   2.611  1.00 32.37      B    C
ATOM   1736  CD2 LEU   297      24.875  -2.712   4.827  1.00 32.91      B    C
ATOM   1737  C   LEU   297      24.850  -7.073   4.100  1.00 41.61      B    C
ATOM   1738  O   LEU   297      26.014  -7.193   3.724  1.00 42.84      B    O
ATOM   1739  N   ASN   298      24.381  -7.699   5.173  1.00 43.04      B    N
ATOM   1740  CA  ASN   298      25.259  -8.577   5.935  1.00 44.53      B    C
ATOM   1741  CB  ASN   298      24.556  -9.083   7.192  1.00 43.88      B    C
ATOM   1742  CG  ASN   298      24.704  -8.136   8.358  1.00 43.04      B    C
ATOM   1743  OD1 ASN   298      24.706  -6.919   8.186  1.00 43.95      B    O
ATOM   1744  ND2 ASN   298      24.837  -8.689   9.554  1.00 42.99      B    N
ATOM   1745  C   ASN   298      25.710  -9.756   5.083  1.00 45.13      B    C
ATOM   1746  O   ASN   298      26.889 -10.114   5.074  1.00 47.16      B    O
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ATOM   1747  N   ALA   299      24.763 -10.345   4.363  1.00 44.07      B    N
ATOM   1748  CA  ALA   299      25.055 -11.440   3.456  1.00 43.47      B    C
ATOM   1749  CB  ALA   299      23.842 -11.721   2.605  1.00 42.59      B    C
ATOM   1750  C   ALA   299      26.245 -11.098   2.562  1.00 43.77      B    C
ATOM   1751  O   ALA   299      27.290 -11.760   2.616  1.00 43.07      B    O
ATOM   1752  N   ALA   300      26.071 -10.056   1.747  1.00 42.89      B    N
ATOM   1753  CA  ALA   300      27.083  -9.631   0.782  1.00 41.86      B    C
ATOM   1754  CB  ALA   300      26.675  -8.321   0.123  1.00 37.77      B    C
ATOM   1755  C   ALA   300      28.419  -9.459   1.474  1.00 42.97      B    C
ATOM   1756  O   ALA   300      29.466  -9.787   0.917  1.00 44.18      B    O
ATOM   1757  N   CYS   301      28.398  -8.947   2.694  1.00 44.23      B    N
ATOM   1758  CA  CYS   301      29.648  -8.840   3.414  1.00 45.71      B    C
ATOM   1759  CB  CYS   301      29.430  -8.131   4.738  1.00 45.13      B    C
ATOM   1760  SG  CYS   301      29.438  -6.352   4.500  1.00 43.18      B    S
ATOM   1761  C   CYS   301      30.228 -10.224   3.612  1.00 47.63      B    C
ATOM   1762  O   CYS   301      31.383 -10.466   3.287  1.00 47.12      B    O
ATOM   1763  N   GLN   302      29.402 -11.137   4.111  1.00 51.11      B    N
ATOM   1764  CA  GLN   302      29.784 -12.532   4.238  1.00 54.23      B    C
ATOM   1765  CB  GLN   302      28.601 -13.345   4.729  1.00 55.02      B    C
ATOM   1766  CG  GLN   302      28.766 -14.830   4.489  1.00 57.93      B    C
ATOM   1767  CD  GLN   302      27.821 -15.644   5.325  1.00 59.06      B    C
ATOM   1768  OE1 GLN   302      26.660 -15.823   4.964  1.00 60.77      B    O
ATOM   1769  NE2 GLN   302      28.307 -16.140   6.460  1.00 61.10      B    N
ATOM   1770  C   GLN   302      30.290 -13.132   2.929  1.00 56.72      B    C
ATOM   1771  O   GLN   302      31.296 -13.840   2.913  1.00 56.31      B    O
ATOM   1772  N   ARG   303      29.596 -12.862   1.830  1.00 59.07      B    N
ATOM   1773  CA  ARG   303      30.067 -13.342   0.542  1.00 62.00      B    C
ATOM   1774  CB  ARG   303      29.103 -12.924  -0.564  1.00 65.78      B    C
ATOM   1775  CG  ARG   303      29.606 -13.207  -1.966  1.00 73.70      B    C
ATOM   1776  CD  ARG   303      30.386 -14.512  -2.031  1.00 81.75      B    C
ATOM   1777  NE  ARG   303      30.633 -14.969  -3.399  1.00 89.51      B    N
ATOM   1778  CZ  ARG   303      31.436 -15.984  -3.699  1.00 94.37      B    C
ATOM   1779  NH1 ARG   303      31.611 -16.348  -4.963  1.00 98.35      B    N
ATOM   1780  NH2 ARG   303      32.070 -16.631  -2.727  1.00 97.91      B    N
ATOM   1781  C   ARG   303      31.477 -12.811   0.255  1.00 61.71      B    C
ATOM   1782  O   ARG   303      32.407 -13.602   0.077  1.00 62.96      B    O
ATOM   1783  N   LEU   304      31.647 -11.488   0.227  1.00 59.43      B    N
ATOM   1784  CA  LEU   304      32.971 -10.898   0.007  1.00 57.53      B    C
ATOM   1785  CB  LEU   304      32.891  -9.371  -0.032  1.00 54.34      B    C
ATOM   1786  CG  LEU   304      32.255  -8.734  -1.268  1.00 52.05      B    C
ATOM   1787  CD1 LEU   304      32.077  -7.257  -1.037  1.00 52.38      B    C
ATOM   1788  CD2 LEU   304      33.112  -8.967  -2.490  1.00 50.60      B    C
ATOM   1789  C   LEU   304      33.997 -11.309   1.066  1.00 57.95      B    C
ATOM   1790  O   LEU   304      35.203 -11.297   0.809  1.00 57.93      B    O
ATOM   1791  N   ALA   305      33.531 -11.666   2.257  1.00 58.05      B    N
ATOM   1792  CA  ALA   305      34.442 -12.134   3.287  1.00 59.23      B    C
ATOM   1793  CB  ALA   305      33.734 -12.190   4.635  1.00 56.74      B    C
ATOM   1794  C   ALA   305      34.965 -13.515   2.905  1.00 61.55      B    C
ATOM   1795  O   ALA   305      36.163 -13.785   3.025  1.00 60.10      B    O
ATOM   1796  N   ARG   306      34.061 -14.374   2.428  1.00 65.01      B    N
ATOM   1797  CA  ARG   306      34.389 -15.766   2.098  1.00 67.69      B    C
ATOM   1798  CB  ARG   306      33.117 -16.562   1.772  1.00 70.93      B    C
ATOM   1799  CG  ARG   306      32.222 -16.781   2.978  1.00 76.23      B    C
ATOM   1800  CD  ARG   306      31.075 -17.736   2.703  1.00 81.71      B    C
ATOM   1801  NE  ARG   306      30.394 -18.093   3.948  1.00 88.37      B    N
ATOM   1802  CZ  ARG   306      29.232 -18.738   4.016  1.00 91.88      B    C
ATOM   1803  NH1 ARG   306      28.693 -19.016   5.202  1.00 93.39      B    N
ATOM   1804  NH2 ARG   306      28.609 -19.102   2.899  1.00 94.36      B    N
ATOM   1805  C   ARG   306      35.348 -15.843   0.921  1.00 66.50      B    C
ATOM   1806  O   ARG   306      36.274 -16.655   0.911  1.00 67.91      B    O
ATOM   1807  N   ALA   307      35.119 -14.989  -0.068  1.00 63.54      B    N
ATOM   1808  CA  ALA   307      36.020 -14.861  -1.205  1.00 59.80      B    C
ATOM   1809  CB  ALA   307      35.355 -14.024  -2.301  1.00 57.91      B    C
ATOM   1810  C   ALA   307      37.357 -14.232  -0.804  1.00 57.82      B    C
ATOM   1811  O   ALA   307      38.131 -13.823  -1.660  1.00 59.09      B    O
ATOM   1812  N   GLY   308      37.626 -14.134   0.492  1.00 54.92      B    N
ATOM   1813  CA  GLY   308      38.963 -13.757   0.909  1.00 51.44      B    C
ATOM   1814  C   GLY   308      39.210 -12.286   1.178  1.00 49.16      B    C
ATOM   1815  O   GLY   308      40.329 -11.899   1.516  1.00 48.32      B    O
ATOM   1816  N   VAL   309      38.180 -11.456   1.047  1.00 48.13      B    N
ATOM   1817  CA  VAL   309      38.370 -10.021   1.235  1.00 46.11      B    C
ATOM   1818  CB  VAL   309      37.356  -9.209   0.421  1.00 44.93      B    C
ATOM   1819  CG1 VAL   309      37.720  -7.748   0.489  1.00 44.68      B    C
ATOM   1820  CG2 VAL   309      37.329  -9.689  -1.027  1.00 42.19      B    C
ATOM   1821  C   VAL   309      38.264  -9.607   2.704  1.00 46.55      B    C
ATOM   1822  O   VAL   309      37.516 -10.209   3.472  1.00 49.09      B    O
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ATOM   1823  N   VAL   310      39.030  -8.587   3.091  1.00 45.59      B    N
ATOM   1824  CA  VAL   310      38.948  -8.015   4.437  1.00 44.13      B    C
ATOM   1825  CB  VAL   310      40.353  -7.668   4.994  1.00 45.86      B    C
ATOM   1826  CG1 VAL   310      40.219  -6.873   6.295  1.00 46.71      B    C
ATOM   1827  CG2 VAL   310      41.164  -8.939   5.221  1.00 46.65      B    C
ATOM   1828  C   VAL   310      38.125  -6.726   4.433  1.00 42.98      B    C
ATOM   1829  O   VAL   310      38.601  -5.679   3.982  1.00 43.01      B    O
ATOM   1830  N   LEU   311      36.898  -6.799   4.942  1.00 41.73      B    N
ATOM   1831  CA  LEU   311      36.047  -5.612   5.081  1.00 38.57      B    C
ATOM   1832  CB  LEU   311      34.578  -5.978   4.883  1.00 38.91      B    C
ATOM   1833  CG  LEU   311      34.197  -6.356   3.455  1.00 41.16      B    C
ATOM   1834  CD1 LEU   311      35.473  -6.615   2.644  1.00 43.08      B    C
ATOM   1835  CD2 LEU   311      33.280  -7.585   3.481  1.00 40.54      B    C
ATOM   1836  C   LEU   311      36.210  -4.974   6.448  1.00 36.32      B    C
ATOM   1837  O   LEU   311      35.990  -5.630   7.471  1.00 33.22      B    O
ATOM   1838  N   VAL   312      36.598  -3.696   6.454  1.00 36.10      B    N
ATOM   1839  CA  VAL   312      36.634  -2.901   7.682  1.00 36.13      B    C
ATOM   1840  CB  VAL   312      37.971  -2.156   7.835  1.00 33.57      B    C
ATOM   1841  CG1 VAL   312      37.949  -1.274   9.061  1.00 30.27      B    C
ATOM   1842  CG2 VAL   312      39.094  -3.163   7.964  1.00 34.18      B    C
ATOM   1843  C   VAL   312      35.507  -1.893   7.646  1.00 37.18      B    C
ATOM   1844  O   VAL   312      35.316  -1.213   6.643  1.00 39.23      B    O
ATOM   1845  N   THR   313      34.740  -1.803   8.728  1.00 37.86      B    N
ATOM   1846  CA  THR   313      33.611  -0.882   8.744  1.00 37.25      B    C
ATOM   1847  CB  THR   313      32.291  -1.645   8.538  1.00 36.13      B    C
ATOM   1848  OG1 THR   313      31.263  -0.721   8.168  1.00 37.57      B    O
ATOM   1849  CG2 THR   313      31.887  -2.358   9.814  1.00 33.52      B    C
ATOM   1850  C   THR   313      33.531  -0.102  10.053  1.00 36.40      B    C
ATOM   1851  O   THR   313      34.036  -0.561  11.079  1.00 36.86      B    O
ATOM   1852  N   ALA   314      32.894   1.071  10.008  1.00 34.34      B    N
ATOM   1853  CA  ALA   314      32.627   1.873  11.205  1.00 31.94      B    C
ATOM   1854  CB  ALA   314      32.299   3.285  10.802  1.00 32.67      B    C
ATOM   1855  C   ALA   314      31.488   1.308  12.050  1.00 31.52      B    C
ATOM   1856  O   ALA   314      30.443   0.911  11.521  1.00 31.50      B    O
ATOM   1857  N   ALA   315      31.682   1.295  13.364  1.00 31.10      B    N
ATOM   1858  CA  ALA   315      30.728   0.667  14.277  1.00 32.53      B    C
ATOM   1859  CB  ALA   315      31.354   0.496  15.654  1.00 30.26      B    C
ATOM   1860  C   ALA   315      29.437   1.468  14.400  1.00 35.34      B    C
ATOM   1861  O   ALA   315      28.383   0.913  14.708  1.00 36.03      B    O
ATOM   1862  N   GLY   316      29.520   2.774  14.165  1.00 36.52      B    N
ATOM   1863  CA  GLY   316      28.340   3.606  14.262  1.00 37.34      B    C
ATOM   1864  C   GLY   316      28.494   4.613  15.378  1.00 38.62      B    C
ATOM   1865  O   GLY   316      29.157   4.317  16.376  1.00 41.26      B    O
ATOM   1866  N   ASN   317      27.870   5.782  15.216  1.00 38.59      B    N
ATOM   1867  CA  ASN   317      28.134   6.964  16.041  1.00 38.47      B    C
ATOM   1868  CB  ASN   317      28.289   8.205  15.168  1.00 38.39      B    C
ATOM   1869  CG  ASN   317      29.539   8.187  14.381  1.00 39.27      B    C
ATOM   1870  OD1 ASN   317      30.506   7.535  14.764  1.00 40.16      B    O
ATOM   1871  ND2 ASN   317      29.548   8.902  13.268  1.00 40.64      B    N
ATOM   1872  C   ASN   317      27.033   7.264  17.029  1.00 38.47      B    C
ATOM   1873  O   ASN   317      26.906   8.408  17.488  1.00 37.31      B    O
ATOM   1874  N   PHE   318      26.217   6.272  17.343  1.00 38.66      B    N
ATOM   1875  CA  PHE   318      24.974   6.581  18.027  1.00 39.58      B    C
ATOM   1876  CB  PHE   318      23.816   5.899  17.304  1.00 38.09      B    C
ATOM   1877  CG  PHE   318      23.744   6.244  15.839  1.00 35.73      B    C
ATOM   1878  CD1 PHE   318      23.340   7.502  15.430  1.00 33.00      B    C
ATOM   1879  CD2 PHE   318      24.089   5.313  14.869  1.00 34.65      B    C
ATOM   1880  CE1 PHE   318      23.280   7.821  14.083  1.00 30.08      B    C
ATOM   1881  CE2 PHE   318      24.026   5.640  13.516  1.00 32.23      B    C
ATOM   1882  CZ  PHE   318      23.620   6.893  13.132  1.00 28.85      B    C
ATOM   1883  C   PHE   318      24.987   6.218  19.499  1.00 39.58      B    C
ATOM   1884  O   PHE   318      23.973   6.342  20.172  1.00 39.71      B    O
ATOM   1885  N   ARG   319      26.150   5.800  19.996  1.00 41.36      B    N
ATOM   1886  CA  ARG   319      26.316   5.383  21.392  1.00 43.43      B    C
ATOM   1887  CB  ARG   319      26.128   6.579  22.341  1.00 44.77      B    C
ATOM   1888  CG  ARG   319      26.990   6.509  23.603  1.00 48.54      B    C
ATOM   1889  CD  ARG   319      26.728   7.651  24.620  1.00 51.31      B    C
ATOM   1890  NE  ARG   319      27.431   7.397  25.884  1.00 55.25      B    N
ATOM   1891  CZ  ARG   319      28.457   8.111  26.349  1.00 58.43      B    C
ATOM   1892  NH1 ARG   319      28.914   9.152  25.661  1.00 59.31      B    N
ATOM   1893  NH2 ARG   319      29.051   7.763  27.490  1.00 57.79      B    N
ATOM   1894  C   ARG   319      25.308   4.271  21.720  1.00 43.91      B    C
ATOM   1895  O   ARG   319      24.741   4.212  22.820  1.00 44.45      B    O
ATOM   1896  N   ASP   320      25.101   3.396  20.743  1.00 43.13      B    N
ATOM   1897  CA  ASP   320      24.102   2.348  20.809  1.00 43.73      B    C
ATOM   1898  CB  ASP   320      23.065   2.577  19.715  1.00 42.02      B    C
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ATOM   1899  CG  ASP   320      21.795   1.807  19.954  1.00 45.94      B    C
ATOM   1900  OD1 ASP   320      21.657   1.219  21.049  1.00 48.90      B    O
ATOM   1901  OD2 ASP   320      20.926   1.785  19.048  1.00 48.43      B    O
ATOM   1902  C   ASP   320      24.826   1.020  20.580  1.00 45.02      B    C
ATOM   1903  O   ASP   320      26.034   1.010  20.291  1.00 45.17      B    O
ATOM   1904  N   ASP   321      24.111  -0.095  20.714  1.00 45.07      B    N
ATOM   1905  CA  ASP   321      24.692  -1.392  20.387  1.00 46.17      B    C
ATOM   1906  CB  ASP   321      23.789  -2.522  20.884  1.00 47.34      B    C
ATOM   1907  CG  ASP   321      24.383  -3.898  20.619  1.00 51.14      B    C
ATOM   1908  OD1 ASP   321      25.355  -3.996  19.828  1.00 51.98      B    O
ATOM   1909  OD2 ASP   321      23.888  -4.892  21.202  1.00 53.20      B    O
ATOM   1910  C   ASP   321      24.899  -1.522  18.871  1.00 46.01      B    C
ATOM   1911  O   ASP   321      23.972  -1.311  18.081  1.00 46.19      B    O
ATOM   1912  N   ALA   322      26.118  -1.879  18.473  1.00 45.06      B    N
ATOM   1913  CA  ALA   322      26.484  -1.976  17.059  1.00 44.18      B    C
ATOM   1914  CB  ALA   322      27.964  -2.302  16.936  1.00 42.98      B    C
ATOM   1915  C   ALA   322      25.666  -3.011  16.292  1.00 44.26      B    C
ATOM   1916  O   ALA   322      25.483  -2.898  15.082  1.00 42.38      B    O
ATOM   1917  N   CYS   323      25.170  -4.020  16.996  1.00 46.17      B    N
ATOM   1918  CA  CYS   323      24.540  -5.154  16.335  1.00 47.75      B    C
ATOM   1919  C   CYS   323      23.225  -4.782  15.655  1.00 47.19      B    C
ATOM   1920  O   CYS   323      22.621  -5.596  14.947  1.00 49.21      B    O
ATOM   1921  CB  CYS   323      24.302  -6.277  17.337  1.00 47.92      B    C
ATOM   1922  SG  CYS   323      25.755  -6.815  18.317  1.00 57.92      B    S
ATOM   1923  N   LEU   324      22.786  -3.547  15.859  1.00 44.42      B    N
ATOM   1924  CA  LEU   324      21.537  -3.106  15.275  1.00 41.95      B    C
ATOM   1925  CB  LEU   324      20.781  -2.256  16.288  1.00 42.78      B    C
ATOM   1926  CG  LEU   324      19.899  -3.109  17.215  1.00 42.58      B    C
ATOM   1927  CD1 LEU   324      20.409  -4.537  17.241  1.00 41.91      B    C
ATOM   1928  CD2 LEU   324      19.893  -2.514  18.621  1.00 41.27      B    C
ATOM   1929  C   LEU   324      21.746  -2.348  13.969  1.00 41.25      B    C
ATOM   1930  O   LEU   324      20.801  -1.845  13.367  1.00 38.50      B    O
ATOM   1931  N   TYR   325      22.992  -2.299  13.519  1.00 40.98      B    N
ATOM   1932  CA  TYR   325      23.347  -1.560  12.315  1.00 39.73      B    C
ATOM   1933  CB  TYR   325      24.155  -0.328  12.696  1.00 37.77      B    C
ATOM   1934  CG  TYR   325      23.499   0.517  13.742  1.00 33.29      B    C
ATOM   1935  CD1 TYR   325      22.650   1.557  13.377  1.00 34.00      B    C
ATOM   1936  CE1 TYR   325      22.022   2.334  14.321  1.00 33.26      B    C
ATOM   1937  CD2 TYR   325      23.709   0.271  15.086  1.00 30.61      B    C
ATOM   1938  CE2 TYR   325      23.087   1.038  16.039  1.00 33.72      B    C
ATOM   1939  CZ  TYR   325      22.239   2.074  15.649  1.00 33.01      B    C
ATOM   1940  OH  TYR   325      21.597   2.844  16.588  1.00 32.19      B    O
ATOM   1941  C   TYR   325      24.188  -2.407  11.377  1.00 40.49      B    C
ATOM   1942  O   TYR   325      25.078  -3.134  11.823  1.00 41.28      B    O
ATOM   1943  N   SER   326      23.936  -2.294  10.080  1.00 40.51      B    N
ATOM   1944  CA  SER   326      24.848  -2.889   9.106  1.00 41.58      B    C
ATOM   1945  CB  SER   326      24.062  -3.730   8.093  1.00 42.97      B    C
ATOM   1946  OG  SER   326      23.315  -4.736   8.753  1.00 42.86      B    O
ATOM   1947  C   SER   326      25.653  -1.791   8.393  1.00 41.09      B    C
ATOM   1948  O   SER   326      25.202  -0.655   8.270  1.00 42.79      B    O
ATOM   1949  N   PRO   327      26.860  -2.123   7.924  1.00 40.03      B    N
ATOM   1950  CD  PRO   327      27.684  -1.256   7.062  1.00 39.65      B    C
ATOM   1951  CA  PRO   327      27.418  -3.473   8.060  1.00 38.97      B    C
ATOM   1952  CB  PRO   327      28.303  -3.620   6.821  1.00 38.89      B    C
ATOM   1953  CG  PRO   327      28.693  -2.200   6.454  1.00 38.79      B    C
ATOM   1954  C   PRO   327      28.168  -3.781   9.358  1.00 37.64      B    C
ATOM   1955  O   PRO   327      28.985  -4.697   9.392  1.00 38.69      B    O
ATOM   1956  N   ALA   328      27.890  -3.037  10.424  1.00 35.56      B    N
ATOM   1957  CA  ALA   328      28.624  -3.219  11.672  1.00 34.25      B    C
ATOM   1958  CB  ALA   328      28.270  -2.119  12.651  1.00 31.78      B    C
ATOM   1959  C   ALA   328      28.316  -4.571  12.287  1.00 34.71      B    C
ATOM   1960  O   ALA   328      29.181  -5.236  12.848  1.00 32.22      B    O
ATOM   1961  N   SER   329      27.064  -4.972  12.185  1.00 37.03      B    N
ATOM   1962  CA  SER   329      26.602  -6.104  12.955  1.00 39.06      B    C
ATOM   1963  CB  SER   329      25.068  -6.120  13.024  1.00 39.81      B    C
ATOM   1964  OG  SER   329      24.482  -6.166  11.734  1.00 39.62      B    O
ATOM   1965  C   SER   329      27.123  -7.343  12.282  1.00 39.36      B    C
ATOM   1966  O   SER   329      27.029  -8.439  12.827  1.00 41.11      B    O
ATOM   1967  N   ALA   330      27.691  -7.163  11.096  1.00 38.72      B    N
ATOM   1968  CA  ALA   330      28.173  -8.304  10.324  1.00 39.45      B    C
ATOM   1969  CB  ALA   330      28.489  -7.871   8.901  1.00 36.46      B    C
ATOM   1970  C   ALA   330      29.391  -8.988  10.962  1.00 40.24      B    C
ATOM   1971  O   ALA   330      30.410  -8.355  11.276  1.00 39.63      B    O
ATOM   1972  N   PRO   331      29.287 -10.308  11.159  1.00 41.42      B    N
ATOM   1973  CD  PRO   331      28.083 -11.075  10.788  1.00 42.18      B    C
ATOM   1974  CA  PRO   331      30.275 -11.147  11.842  1.00 42.22      B    C
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ATOM   1975  CB  PRO   331      29.609 -12.530  11.881  1.00 42.39      B    C
ATOM   1976  CG  PRO   331      28.163 -12.270  11.698  1.00 42.38      B    C
ATOM   1977  C   PRO   331      31.613 -11.193  11.112  1.00 42.21      B    C
ATOM   1978  O   PRO   331      32.677 -11.112  11.727  1.00 41.29      B    O
ATOM   1979  N   GLU   332      31.552 -11.340   9.797  1.00 42.77      B    N
ATOM   1980  CA  GLU   332      32.755 -11.545   9.014  1.00 45.40      B    C
ATOM   1981  CB  GLU   332      32.432 -12.446   7.825  1.00 46.55      B    C
ATOM   1982  CG  GLU   332      31.067 -12.180   7.218  1.00 50.46      B    C
ATOM   1983  CD  GLU   332      30.035 -13.245   7.573  1.00 52.20      B    C
ATOM   1984  OE1 GLU   332      30.196 -14.405   7.128  1.00 50.77      B    O
ATOM   1985  OE2 GLU   332      29.058 -12.916   8.292  1.00 52.83      B    O
ATOM   1986  C   GLU   332      33.344 -10.209   8.551  1.00 45.69      B    C
ATOM   1987  O   GLU   332      34.237 -10.159   7.698  1.00 47.38      B    O
ATOM   1988  N   VAL   333      32.832  -9.127   9.129  1.00 45.52      B    N
ATOM   1989  CA  VAL   333      33.361  -7.777   8.926  1.00 44.61      B    C
ATOM   1990  CB  VAL   333      32.211  -6.768   8.689  1.00 43.61      B    C
ATOM   1991  CG1 VAL   333      32.749  -5.345   8.738  1.00 43.34      B    C
ATOM   1992  CG2 VAL   333      31.545  -7.051   7.350  1.00 42.09      B    C
ATOM   1993  C   VAL   333      34.169  -7.311  10.148  1.00 44.86      B    C
ATOM   1994  O   VAL   333      33.864  -7.694  11.283  1.00 44.91      B    O
ATOM   1995  N   ILE   334      35.193  -6.488   9.915  1.00 43.56      B    N
ATOM   1996  CA  ILE   334      35.937  -5.873  11.009  1.00 42.14      B    C
ATOM   1997  CB  ILE   334      37.403  -5.597  10.618  1.00 41.32      B    C
ATOM   1998  CG2 ILE   334      38.148  -4.925  11.771  1.00 39.45      B    C
ATOM   1999  CG1 ILE   334      38.108  -6.917  10.323  1.00 42.05      B    C
ATOM   2000  CD1 ILE   334      38.789  -7.525  11.528  1.00 41.74      B    C
ATOM   2001  C   ILE   334      35.276  -4.564  11.391  1.00 42.30      B    C
ATOM   2002  O   ILE   334      35.264  -3.604  10.617  1.00 44.99      B    O
ATOM   2003  N   THR   335      34.724  -4.528  12.593  1.00 40.57      B    N
ATOM   2004  CA  THR   335      33.899  -3.411  13.012  1.00 39.86      B    C
ATOM   2005  CB  THR   335      32.565  -3.934  13.560  1.00 38.34      B    C
ATOM   2006  OG1 THR   335      31.900  -4.682  12.527  1.00 35.93      B    O
ATOM   2007  CG2 THR   335      31.676  -2.783  14.016  1.00 37.95      B    C
ATOM   2008  C   THR   335      34.653  -2.615  14.064  1.00 39.84      B    C
ATOM   2009  O   THR   335      35.212  -3.185  14.999  1.00 40.88      B    O
ATOM   2010  N   VAL   336      34.695  -1.297  13.903  1.00 39.68      B    N
ATOM   2011  CA  VAL   336      35.676  -0.501  14.628  1.00 38.86      B    C
ATOM   2012  CB  VAL   336      36.670   0.190  13.674  1.00 36.14      B    C
ATOM   2013  CG1 VAL   336      37.660   1.015  14.475  1.00 34.81      B    C
ATOM   2014  CG2 VAL   336      37.398  -0.843  12.830  1.00 34.08      B    C
ATOM   2015  C   VAL   336      35.029   0.576  15.455  1.00 39.97      B    C
ATOM   2016  O   VAL   336      34.361   1.463  14.923  1.00 41.64      B    O
ATOM   2017  N   GLY   337      35.239   0.518  16.763  1.00 40.20      B    N
ATOM   2018  CA  GLY   337      34.802   1.610  17.606  1.00 39.73      B    C
ATOM   2019  C   GLY   337      35.746   2.787  17.486  1.00 39.43      B    C
ATOM   2020  O   GLY   337      36.780   2.690  16.820  1.00 39.46      B    O
ATOM   2021  N   ALA   338      35.391   3.901  18.126  1.00 39.12      B    N
ATOM   2022  CA  ALA   338      36.217   5.106  18.096  1.00 38.05      B    C
ATOM   2023  CB  ALA   338      35.435   6.256  17.479  1.00 34.55      B    C
ATOM   2024  C   ALA   338      36.667   5.466  19.509  1.00 38.46      B    C
ATOM   2025  O   ALA   338      35.876   5.430  20.451  1.00 39.47      B    O
ATOM   2026  N   THR   339      37.944   5.795  19.651  1.00 39.40      B    N
ATOM   2027  CA  THR   339      38.479   6.249  20.922  1.00 42.52      B    C
ATOM   2028  CB  THR   339      39.537   5.277  21.517  1.00 44.20      B    C
ATOM   2029  OG1 THR   339      40.599   5.071  20.576  1.00 46.75      B    O
ATOM   2030  CG2 THR   339      38.907   3.935  21.861  1.00 45.49      B    C
ATOM   2031  C   THR   339      39.154   7.569  20.684  1.00 44.11      B    C
ATOM   2032  O   THR   339      39.425   7.931  19.542  1.00 43.96      B    O
ATOM   2033  N   ASN   340      39.422   8.284  21.767  1.00 46.79      B    N
ATOM   2034  CA  ASN   340      40.081   9.577  21.685  1.00 48.44      B    C
ATOM   2035  CB  ASN   340      39.285  10.626  22.465  1.00 46.64      B    C
ATOM   2036  CG  ASN   340      39.236  10.334  23.943  1.00 45.72      B    C
ATOM   2037  OD1 ASN   340      39.719   9.294  24.401  1.00 43.67      B    O
ATOM   2038  ND2 ASN   340      38.651  11.254  24.706  1.00 45.68      B    N
ATOM   2039  C   ASN   340      41.515   9.510  22.210  1.00 47.97      B    C
ATOM   2040  O   ASN   340      42.037   8.434  22.482  1.00 46.71      B    O
ATOM   2041  N   ALA   341      42.134  10.676  22.337  1.00 49.51      B    N
ATOM   2042  CA  ALA   341      43.538  10.786  22.688  1.00 51.79      B    C
ATOM   2043  CB  ALA   341      43.997  12.243  22.534  1.00 49.71      B    C
ATOM   2044  C   ALA   341      43.801  10.296  24.110  1.00 54.25      B    C
ATOM   2045  O   ALA   341      44.954  10.227  24.547  1.00 54.89      B    O
ATOM   2046  N   GLN   342      42.730   9.964  24.829  1.00 56.61      B    N
ATOM   2047  CA  GLN   342      42.838   9.357  26.158  1.00 58.83      B    C
ATOM   2048  CB  GLN   342      41.779   9.946  27.084  1.00 60.38      B    C
ATOM   2049  CG  GLN   342      41.374  11.352  26.715  1.00 63.15      B    C
ATOM   2050  CD  GLN   342      42.561  12.272  26.637  1.00 65.06      B    C
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ATOM   2051  OE1 GLN   342      42.539  13.276  25.918  1.00 66.99      B    O
ATOM   2052  NE2 GLN   342      43.616  11.939  27.381  1.00 66.05      B    N
ATOM   2053  C   GLN   342      42.660   7.832  26.105  1.00 59.71      B    C
ATOM   2054  O   GLN   342      42.625   7.165  27.143  1.00 59.74      B    O
ATOM   2055  N   ASP   343      42.547   7.289  24.895  1.00 59.69      B    N
ATOM   2056  CA  ASP   343      42.193   5.888  24.706  1.00 59.97      B    C
ATOM   2057  CB  ASP   343      43.276   4.988  25.315  1.00 60.43      B    C
ATOM   2058  CG  ASP   343      44.410   4.685  24.328  1.00 62.18      B    C
ATOM   2059  OD1 ASP   343      44.125   4.483  23.130  1.00 61.55      B    O
ATOM   2060  OD2 ASP   343      45.591   4.644  24.739  1.00 64.06      B    O
ATOM   2061  C   ASP   343      40.804   5.552  25.281  1.00 59.58      B    C
ATOM   2062  O   ASP   343      40.562   4.440  25.756  1.00 58.20      B    O
ATOM   2063  N   GLN   344      39.896   6.527  25.218  1.00 58.40      B    N
ATOM   2064  CA  GLN   344      38.531   6.362  25.712  1.00 56.68      B    C
ATOM   2065  CB  GLN   344      38.226   7.428  26.768  1.00 57.01      B    C
ATOM   2066  CG  GLN   344      38.911   7.171  28.100  1.00 59.32      B    C
ATOM   2067  CD  GLN   344      38.507   5.837  28.714  1.00 61.30      B    C
ATOM   2068  OE1 GLN   344      37.395   5.687  29.225  1.00 61.08      B    O
ATOM   2069  NE2 GLN   344      39.410   4.858  28.660  1.00 61.88      B    N
ATOM   2070  C   GLN   344      37.473   6.420  24.607  1.00 54.73      B    C
ATOM   2071  O   GLN   344      37.713   6.939  23.520  1.00 55.32      B    O
ATOM   2072  N   PRO   345      36.276   5.887  24.884  1.00 52.34      B    N
ATOM   2073  CD  PRO   345      35.864   5.218  26.130  1.00 52.86      B    C
ATOM   2074  CA  PRO   345      35.208   5.872  23.881  1.00 51.32      B    C
ATOM   2075  CB  PRO   345      34.080   5.115  24.572  1.00 52.46      B    C
ATOM   2076  CG  PRO   345      34.752   4.348  25.676  1.00 53.13      B    C
ATOM   2077  C   PRO   345      34.782   7.278  23.486  1.00 48.74      B    C
ATOM   2078  O   PRO   345      34.501   8.114  24.345  1.00 47.73      B    O
ATOM   2079  N   VAL   346      34.732   7.535  22.185  1.00 46.48      B    N
ATOM   2080  CA  VAL   346      34.432   8.875  21.700  1.00 45.16      B    C
ATOM   2081  CB  VAL   346      34.719   8.994  20.195  1.00 44.09      B    C
ATOM   2082  CG1 VAL   346      33.991  10.203  19.640  1.00 45.77      B    C
ATOM   2083  CG2 VAL   346      36.215   9.134  19.961  1.00 43.38      B    C
ATOM   2084  C   VAL   346      32.989   9.327  21.953  1.00 43.26      B    C
ATOM   2085  O   VAL   346      32.032   8.604  21.695  1.00 43.80      B    O
ATOM   2086  N   THR   347      32.833  10.535  22.466  1.00 40.93      B    N
ATOM   2087  CA  THR   347      31.529  11.168  22.437  1.00 38.99      B    C
ATOM   2088  CB  THR   347      31.267  11.969  23.727  1.00 38.98      B    C
ATOM   2089  OG1 THR   347      32.410  12.783  24.025  1.00 39.16      B    O
ATOM   2090  CG2 THR   347      31.000  11.024  24.877  1.00 37.77      B    C
ATOM   2091  C   THR   347      31.437  12.095  21.225  1.00 36.77      B    C
ATOM   2092  O   THR   347      32.324  12.917  20.981  1.00 35.24      B    O
ATOM   2093  N   LEU   348      30.359  11.933  20.463  1.00 34.41      B    N
ATOM   2094  CA  LEU   348      30.085  12.764  19.300  1.00 32.42      B    C
ATOM   2095  CB  LEU   348      29.981  11.869  18.057  1.00 30.11      B    C
ATOM   2096  CG  LEU   348      31.248  11.023  17.803  1.00 29.43      B    C
ATOM   2097  CD1 LEU   348      30.916   9.801  16.981  1.00 26.50      B    C
ATOM   2098  CD2 LEU   348      32.315  11.869  17.112  1.00 25.20      B    C
ATOM   2099  C   LEU   348      28.760  13.441  19.609  1.00 31.86      B    C
ATOM   2100  O   LEU   348      27.766  12.762  19.801  1.00 33.15      B    O
ATOM   2101  N   GLY   349      28.735  14.764  19.702  1.00 31.16      B    N
ATOM   2102  CA  GLY   349      27.519  15.402  20.194  1.00 32.64      B    C
ATOM   2103  C   GLY   349      27.086  14.817  21.534  1.00 32.03      B    C
ATOM   2104  O   GLY   349      27.831  14.868  22.484  1.00 34.71      B    O
ATOM   2105  N   THR   350      25.895  14.251  21.642  1.00 33.25      B    N
ATOM   2106  CA  THR   350      25.549  13.563  22.890  1.00 32.37      B    C
ATOM   2107  CB  THR   350      24.172  14.014  23.433  1.00 31.72      B    C
ATOM   2108  OG1 THR   350      23.142  13.664  22.502  1.00 33.43      B    O
ATOM   2109  CG2 THR   350      24.156  15.502  23.644  1.00 32.71      B    C
ATOM   2110  C   THR   350      25.553  12.039  22.721  1.00 31.43      B    C
ATOM   2111  O   THR   350      25.330  11.292  23.679  1.00 30.78      B    O
ATOM   2112  N   LEU   351      25.808  11.586  21.497  1.00 29.11      B    N
ATOM   2113  CA  LEU   351      26.001  10.177  21.238  1.00 27.69      B    C
ATOM   2114  CB  LEU   351      25.421   9.831  19.878  1.00 27.14      B    C
ATOM   2115  CG  LEU   351      23.939  10.206  19.774  1.00 28.37      B    C
ATOM   2116  CD1 LEU   351      23.314   9.489  18.590  1.00 29.77      B    C
ATOM   2117  CD2 LEU   351      23.218   9.806  21.054  1.00 27.08      B    C
ATOM   2118  C   LEU   351      27.482   9.824  21.298  1.00 29.91      B    C
ATOM   2119  O   LEU   351      28.173  10.139  22.277  1.00 31.43      B    O
ATOM   2120  N   GLY   352      27.981   9.178  20.248  1.00 30.92      B    N
ATOM   2121  CA  GLY   352      29.376   8.774  20.232  1.00 30.77      B    C
ATOM   2122  C   GLY   352      29.534   7.340  19.770  1.00 30.80      B    C
ATOM   2123  O   GLY   352      28.656   6.788  19.104  1.00 31.81      B    O
ATOM   2124  N   THR   353      30.647   6.715  20.121  1.00 30.12      B    N
ATOM   2125  CA  THR   353      30.980   5.456  19.488  1.00 30.91      B    C
ATOM   2126  CB  THR   353      32.410   5.035  19.835  1.00 29.91      B    C
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ATOM   2127  OG1 THR   353      32.743   3.818  19.152  1.00 26.96      B     O
ATOM   2128  CG2 THR   353      32.539   4.829  21.332  1.00 31.40      B     C
ATOM   2129  C   THR   353      30.020   4.381  19.955  1.00 32.86      B     C
ATOM   2130  O   THR   353      29.869   4.171  21.162  1.00 32.88      B     O
ATOM   2131  N   ASN   354      29.371   3.710  19.002  1.00 32.48      B     N
ATOM   2132  CA  ASN   354      28.714   2.430  19.277  1.00 34.53      B     C
ATOM   2133  CB  ASN   354      28.125   1.825  17.994  1.00 32.64      B     C
ATOM   2134  CG  ASN   354      26.811   2.451  17.611  1.00 32.64      B     C
ATOM   2135  OD1 ASN   354      26.421   3.484  18.158  1.00 34.86      B     O
ATOM   2136  ND2 ASN   354      26.116   1.838  16.669  1.00 30.53      B     N
ATOM   2137  C   ASN   354      29.656   1.399  19.910  1.00 34.76      B     C
ATOM   2138  O   ASN   354      30.882   1.558  19.919  1.00 32.98      B     O
ATOM   2139  N   PHE   355      29.059   0.326  20.413  1.00 36.79      B     N
ATOM   2140  CA  PHE   355      29.770  -0.671  21.207  1.00 39.22      B     C
ATOM   2141  CB  PHE   355      29.805  -0.217  22.661  1.00 39.08      B     C
ATOM   2142  CG  PHE   355      28.478   0.292  23.150  1.00 39.28      B     C
ATOM   2143  CD1 PHE   355      28.297   1.635  23.433  1.00 37.87      B     C
ATOM   2144  CD2 PHE   355      27.399  -0.570  23.280  1.00 39.36      B     C
ATOM   2145  CE1 PHE   355      27.073   2.107  23.831  1.00 38.35      B     C
ATOM   2146  CE2 PHE   355      26.166  -0.100  23.681  1.00 39.17      B     C
ATOM   2147  CZ  PHE   355      26.004   1.241  23.955  1.00 38.97      B     C
ATOM   2148  C   PHE   355      29.058  -2.022  21.128  1.00 41.42      B     C
ATOM   2149  O   PHE   355      28.135  -2.222  20.327  1.00 42.06      B     O
ATOM   2150  N   GLY   356      29.472  -2.945  21.985  1.00 43.05      B     N
ATOM   2151  CA  GLY   356      28.791  -4.217  22.030  1.00 46.32      B     C
ATOM   2152  C   GLY   356      29.615  -5.316  21.418  1.00 49.86      B     C
ATOM   2153  O   GLY   356      30.734  -5.080  20.960  1.00 49.34      B     O
ATOM   2154  N   ARG   357      29.067  -6.525  21.415  1.00 52.59      B     N
ATOM   2155  CA  ARG   357      29.853  -7.687  21.050  1.00 55.32      B     C
ATOM   2156  CB  ARG   357      29.054  -8.957  21.316  1.00 56.96      B     C
ATOM   2157  CG  ARG   357      27.733  -9.016  20.601  1.00 57.12      B     C
ATOM   2158  CD  ARG   357      26.958 -10.270  20.970  1.00 60.05      B     C
ATOM   2159  NE  ARG   357      25.646 -10.272  20.324  1.00 66.70      B     N
ATOM   2160  CZ  ARG   357      25.436 -10.567  19.041  1.00 69.70      B     C
ATOM   2161  NH1 ARG   357      24.202 -10.535  18.550  1.00 71.70      B     N
ATOM   2162  NH2 ARG   357      26.455 -10.900  18.249  1.00 70.96      B     N
ATOM   2163  C   ARG   357      30.282  -7.628  19.584  1.00 55.87      B     C
ATOM   2164  O   ARG   357      31.312  -8.195  19.208  1.00 58.14      B     O
ATOM   2165  N   CYS   358      29.493  -6.925  18.770  1.00 53.84      B     N
ATOM   2166  CA  CYS   358      29.711  -6.841  17.328  1.00 50.17      B     C
ATOM   2167  C   CYS   358      30.828  -5.854  16.927  1.00 48.24      B     C
ATOM   2168  O   CYS   358      31.055  -5.601  15.744  1.00 46.71      B     O
ATOM   2169  CB  CYS   358      28.381  -6.484  16.648  1.00 50.59      B     C
ATOM   2170  SG  CYS   358      27.087  -7.713  17.021  1.00 53.47      B     S
ATOM   2171  N   VAL   359      31.531  -5.306  17.912  1.00 46.32      B     N
ATOM   2172  CA  VAL   359      32.716  -4.503  17.630  1.00 45.82      B     C
ATOM   2173  CB  VAL   359      32.806  -3.282  18.567  1.00 44.83      B     C
ATOM   2174  CG1 VAL   359      34.050  -2.469  18.240  1.00 42.10      B     C
ATOM   2175  CG2 VAL   359      31.541  -2.426  18.436  1.00 44.41      B     C
ATOM   2176  C   VAL   359      33.968  -5.344  17.829  1.00 46.74      B     C
ATOM   2177  O   VAL   359      34.087  -6.061  18.821  1.00 48.03      B     O
ATOM   2178  N   ASP   360      34.908  -5.262  16.893  1.00 46.35      B     N
ATOM   2179  CA  ASP   360      36.122  -6.067  16.991  1.00 44.78      B     C
ATOM   2180  CB  ASP   360      36.624  -6.448  15.597  1.00 44.72      B     C
ATOM   2181  CG  ASP   360      35.649  -7.354  14.859  1.00 46.97      B     C
ATOM   2182  OD1 ASP   360      35.617  -8.576  15.133  1.00 48.10      B     O
ATOM   2183  OD2 ASP   360      34.902  -6.842  14.005  1.00 49.17      B     O
ATOM   2184  C   ASP   360      37.197  -5.326  17.756  1.00 43.17      B     C
ATOM   2185  O   ASP   360      38.004  -5.931  18.438  1.00 44.20      B     O
ATOM   2186  N   LEU   361      37.192  -4.008  17.653  1.00 42.15      B     N
ATOM   2187  CA  LEU   361      38.119  -3.190  18.417  1.00 42.07      B     C
ATOM   2188  CB  LEU   361      39.577  -3.571  18.098  1.00 42.02      B     C
ATOM   2189  CG  LEU   361      40.202  -3.182  16.739  1.00 43.57      B     C
ATOM   2190  CD1 LEU   361      41.713  -3.002  16.874  1.00 42.62      B     C
ATOM   2191  CD2 LEU   361      39.894  -4.237  15.704  1.00 41.99      B     C
ATOM   2192  C   LEU   361      37.879  -1.715  18.092  1.00 42.18      B     C
ATOM   2193  O   LEU   361      36.995  -1.375  17.297  1.00 40.87      B     O
ATOM   2194  N   PHE   362      38.669  -0.850  18.717  1.00 42.23      B     N
ATOM   2195  CA  PHE   362      38.589   0.587  18.498  1.00 43.61      B     C
ATOM   2196  CB  PHE   362      38.373   1.307  19.834  1.00 42.71      B     C
ATOM   2197  CG  PHE   362      37.078   0.961  20.497  1.00 43.77      B     C
ATOM   2198  CD1 PHE   362      36.206   1.953  20.907  1.00 44.12      B     C
ATOM   2199  CD2 PHE   362      36.716  -0.361  20.688  1.00 43.83      B     C
ATOM   2200  CE1 PHE   362      34.987   1.627  21.494  1.00 44.59      B     C
ATOM   2201  CE2 PHE   362      35.505  -0.693  21.272  1.00 44.45      B     C
ATOM   2202  CZ  PHE   362      34.640   0.300  21.677  1.00 43.51      B     C
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ATOM	2203	C	PHE	362	39.873	1.091	17.844	1.00	43.97	B	C
ATOM	2204	O	PHE	362	40.813	0.327	17.648	1.00	44.43	B	O
ATOM	2205	N	ALA	363	39.896	2.374	17.498	1.00	44.29	B	N
ATOM	2206	CA	ALA	363	41.108	3.047	17.043	1.00	42.94	B	C
ATOM	2207	CB	ALA	363	41.400	2.678	15.606	1.00	41.34	B	C
ATOM	2208	C	ALA	363	40.849	4.544	17.170	1.00	42.78	B	C
ATOM	2209	O	ALA	363	39.703	4.971	17.259	1.00	40.55	B	O
ATOM	2210	N	PRO	364	41.909	5.362	17.184	1.00	44.63	B	N
ATOM	2211	CD	PRO	364	43.317	5.026	16.940	1.00	45.92	B	C
ATOM	2212	CA	PRO	364	41.721	6.807	17.314	1.00	45.95	B	C
ATOM	2213	CB	PRO	364	43.094	7.378	16.984	1.00	45.73	B	C
ATOM	2214	CG	PRO	364	44.027	6.299	17.301	1.00	45.76	B	C
ATOM	2215	C	PRO	364	40.669	7.297	16.329	1.00	47.71	B	C
ATOM	2216	O	PRO	364	40.728	6.973	15.138	1.00	46.96	B	O
ATOM	2217	N	GLY	365	39.716	8.076	16.839	1.00	48.81	B	N
ATOM	2218	CA	GLY	365	38.632	8.575	16.016	1.00	50.95	B	C
ATOM	2219	C	GLY	365	38.112	9.945	16.425	1.00	52.82	B	C
ATOM	2220	O	GLY	365	37.095	10.417	15.896	1.00	54.20	B	O
ATOM	2221	N	GLU	366	38.798	10.585	17.367	1.00	53.12	B	N
ATOM	2222	CA	GLU	366	38.454	11.940	17.772	1.00	53.18	B	C
ATOM	2223	CB	GLU	366	38.184	11.985	19.284	1.00	55.16	B	C
ATOM	2224	CG	GLU	366	37.350	13.188	19.757	1.00	57.81	B	C
ATOM	2225	CD	GLU	366	37.236	13.294	21.288	1.00	59.11	B	C
ATOM	2226	OE1	GLU	366	36.271	12.740	21.874	1.00	59.52	B	O
ATOM	2227	OE2	GLU	366	38.120	13.938	21.902	1.00	58.89	B	O
ATOM	2228	C	GLU	366	39.627	12.840	17.416	1.00	51.60	B	C
ATOM	2229	O	GLU	366	40.750	12.567	17.799	1.00	53.06	B	O
ATOM	2230	N	ASP	367	39.375	13.900	16.663	1.00	50.68	B	N
ATOM	2231	CA	ASP	367	40.416	14.884	16.377	1.00	48.72	B	C
ATOM	2232	CB	ASP	367	41.114	15.288	17.680	1.00	51.98	B	C
ATOM	2233	CG	ASP	367	42.050	16.475	17.506	1.00	55.60	B	C
ATOM	2234	OD1	ASP	367	41.637	17.490	16.888	1.00	57.07	B	O
ATOM	2235	OD2	ASP	367	43.200	16.388	17.998	1.00	57.74	B	O
ATOM	2236	C	ASP	367	41.442	14.320	15.403	1.00	45.06	B	C
ATOM	2237	O	ASP	367	42.648	14.432	15.614	1.00	44.79	B	O
ATOM	2238	N	ILE	368	40.977	13.694	14.337	1.00	40.15	B	N
ATOM	2239	CA	ILE	368	41.924	13.092	13.417	1.00	35.41	B	C
ATOM	2240	CB	ILE	368	41.340	11.830	12.776	1.00	32.03	B	C
ATOM	2241	CG2	ILE	368	42.346	11.236	11.818	1.00	30.65	B	C
ATOM	2242	CG1	ILE	368	40.900	10.843	13.860	1.00	28.33	B	C
ATOM	2243	CD1	ILE	368	41.884	10.653	14.993	1.00	22.93	B	C
ATOM	2244	C	ILE	368	42.275	14.099	12.318	1.00	35.65	B	C
ATOM	2245	O	ILE	368	41.392	14.566	11.584	1.00	34.20	B	O
ATOM	2246	N	ILE	369	43.558	14.444	12.209	1.00	33.12	B	N
ATOM	2247	CA	ILE	369	43.975	15.381	11.180	1.00	31.13	B	C
ATOM	2248	CB	ILE	369	45.308	16.061	11.529	1.00	31.54	B	C
ATOM	2249	CG2	ILE	369	46.469	15.233	11.000	1.00	29.64	B	C
ATOM	2250	CG1	ILE	369	45.366	17.448	10.875	1.00	31.98	B	C
ATOM	2251	CD1	ILE	369	46.541	18.283	11.339	1.00	32.59	B	C
ATOM	2252	C	ILE	369	44.140	14.625	9.867	1.00	30.83	B	C
ATOM	2253	O	ILE	369	44.605	13.483	9.850	1.00	31.37	B	O
ATOM	2254	N	GLY	370	43.747	15.264	8.773	1.00	30.51	B	N
ATOM	2255	CA	GLY	370	43.750	14.606	7.482	1.00	32.26	B	C
ATOM	2256	C	GLY	370	43.444	15.582	6.365	1.00	32.89	B	C
ATOM	2257	O	GLY	370	43.140	16.755	6.619	1.00	33.94	B	O
ATOM	2258	N	ALA	371	43.524	15.102	5.126	1.00	32.44	B	N
ATOM	2259	CA	ALA	371	43.276	15.930	3.937	1.00	31.69	B	C
ATOM	2260	CB	ALA	371	43.233	15.044	2.699	1.00	28.10	B	C
ATOM	2261	C	ALA	371	41.974	16.729	4.029	1.00	32.16	B	C
ATOM	2262	O	ALA	371	40.945	16.180	4.402	1.00	34.89	B	O
ATOM	2263	N	SER	372	42.009	18.015	3.684	1.00	31.83	B	N
ATOM	2264	CA	SER	372	40.774	18.781	3.552	1.00	31.63	B	C
ATOM	2265	CB	SER	372	40.803	20.030	4.414	1.00	29.79	B	C
ATOM	2266	OG	SER	372	39.646	20.803	4.140	1.00	27.55	B	O
ATOM	2267	C	SER	372	40.489	19.198	2.121	1.00	31.94	B	C
ATOM	2268	O	SER	372	41.357	19.687	1.428	1.00	33.59	B	O
ATOM	2269	N	SER	373	39.256	19.019	1.681	1.00	33.37	B	N
ATOM	2270	CA	SER	373	38.922	19.262	0.285	1.00	32.32	B	C
ATOM	2271	CB	SER	373	37.592	18.575	-0.069	1.00	29.34	B	C
ATOM	2272	OG	SER	373	36.498	19.166	0.624	1.00	29.96	B	O
ATOM	2273	C	SER	373	38.846	20.767	0.034	1.00	32.38	B	C
ATOM	2274	O	SER	373	38.728	21.215	-1.111	1.00	28.01	B	O
ATOM	2275	N	ASP	374	38.922	21.537	1.120	1.00	35.17	B	N
ATOM	2276	CA	ASP	374	38.882	23.005	1.040	1.00	38.35	B	C
ATOM	2277	CB	ASP	374	39.132	23.641	2.416	1.00	39.54	B	C
ATOM	2278	CG	ASP	374	37.900	23.614	3.316	1.00	42.83	B	C

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ATOM   2279  OD1 ASP   374      36.992  22.785   3.091  1.00 44.31      B    O
ATOM   2280  OD2 ASP   374      37.837  24.429   4.261  1.00 46.41      B    O
ATOM   2281  C   ASP   374      39.910  23.533   0.047  1.00 39.30      B    C
ATOM   2282  O   ASP   374      39.578  24.303  -0.846  1.00 40.00      B    O
ATOM   2283  N   CYS   375      41.159  23.116   0.189  1.00 39.54      B    N
ATOM   2284  CA  CYS   375      42.150  23.476  -0.807  1.00 41.25      B    C
ATOM   2285  C   CYS   375      43.162  22.362  -0.892  1.00 42.24      B    C
ATOM   2286  O   CYS   375      43.130  21.444  -0.071  1.00 44.57      B    O
ATOM   2287  CB  CYS   375      42.836  24.787  -0.423  1.00 42.60      B    C
ATOM   2288  SG  CYS   375      44.265  24.654   0.698  1.00 43.30      B    S
ATOM   2289  N   SER   376      44.059  22.445  -1.872  1.00 40.33      B    N
ATOM   2290  CA  SER   376      44.898  21.307  -2.254  1.00 37.25      B    C
ATOM   2291  CB  SER   376      45.615  21.602  -3.573  1.00 39.26      B    C
ATOM   2292  OG  SER   376      46.458  22.749  -3.441  1.00 40.65      B    O
ATOM   2293  C   SER   376      45.947  20.922  -1.222  1.00 35.77      B    C
ATOM   2294  O   SER   376      46.542  19.855  -1.319  1.00 34.73      B    O
ATOM   2295  N   THR   377      46.216  21.798  -0.259  1.00 34.14      B    N
ATOM   2296  CA  THR   377      47.278  21.526   0.710  1.00 32.96      B    C
ATOM   2297  CB  THR   377      48.426  22.559   0.603  1.00 29.40      B    C
ATOM   2298  OG1 THR   377      47.982  23.838   1.082  1.00 29.82      B    O
ATOM   2299  CG2 THR   377      48.869  22.695  -0.842  1.00 24.15      B    C
ATOM   2300  C   THR   377      46.685  21.582   2.103  1.00 34.62      B    C
ATOM   2301  O   THR   377      47.349  21.282   3.099  1.00 34.86      B    O
ATOM   2302  N   CYS   378      45.416  21.961   2.138  1.00 35.87      B    N
ATOM   2303  CA  CYS   378      44.663  22.146   3.364  1.00 39.20      B    C
ATOM   2304  C   CYS   378      44.469  20.854   4.157  1.00 38.82      B    C
ATOM   2305  O   CYS   378      44.251  19.800   3.583  1.00 38.85      B    O
ATOM   2306  CB  CYS   378      43.310  22.784   3.006  1.00 41.18      B    C
ATOM   2307  SG  CYS   378      43.483  24.562   2.585  1.00 47.55      B    S
ATOM   2308  N   PHE   379      44.573  20.955   5.481  1.00 40.10      B    N
ATOM   2309  CA  PHE   379      44.255  19.858   6.404  1.00 40.73      B    C
ATOM   2310  CB  PHE   379      45.438  19.563   7.336  1.00 42.07      B    C
ATOM   2311  CG  PHE   379      46.518  18.732   6.711  1.00 44.32      B    C
ATOM   2312  CD1 PHE   379      47.646  19.330   6.174  1.00 45.53      B    C
ATOM   2313  CD2 PHE   379      46.411  17.349   6.667  1.00 44.45      B    C
ATOM   2314  CE1 PHE   379      48.652  18.557   5.601  1.00 48.10      B    C
ATOM   2315  CE2 PHE   379      47.405  16.579   6.100  1.00 45.09      B    C
ATOM   2316  CZ  PHE   379      48.529  17.180   5.567  1.00 46.79      B    C
ATOM   2317  C   PHE   379      43.062  20.238   7.268  1.00 40.73      B    C
ATOM   2318  O   PHE   379      42.756  21.421   7.438  1.00 39.27      B    O
ATOM   2319  N   VAL   380      42.391  19.236   7.827  1.00 41.60      B    N
ATOM   2320  CA  VAL   380      41.339  19.503   8.814  1.00 41.83      B    C
ATOM   2321  CB  VAL   380      39.963  19.731   8.147  1.00 39.80      B    C
ATOM   2322  CG1 VAL   380      39.411  18.415   7.625  1.00 37.70      B    C
ATOM   2323  CG2 VAL   380      39.017  20.360   9.128  1.00 38.24      B    C
ATOM   2324  C   VAL   380      41.200  18.347   9.787  1.00 42.06      B    C
ATOM   2325  O   VAL   380      41.609  17.223   9.496  1.00 40.84      B    O
ATOM   2326  N   SER   381      40.620  18.634  10.944  1.00 43.79      B    N
ATOM   2327  CA  SER   381      40.349  17.600  11.936  1.00 45.78      B    C
ATOM   2328  CB  SER   381      40.716  18.123  13.330  1.00 46.59      B    C
ATOM   2329  OG  SER   381      40.806  17.069  14.279  1.00 51.19      B    O
ATOM   2330  C   SER   381      38.869  17.145  11.900  1.00 45.40      B    C
ATOM   2331  O   SER   381      37.958  17.954  11.746  1.00 43.60      B    O
ATOM   2332  N   GLN   382      38.645  15.841  12.035  1.00 46.71      B    N
ATOM   2333  CA  GLN   382      37.298  15.291  12.031  1.00 47.56      B    C
ATOM   2334  CB  GLN   382      36.971  14.768  10.648  1.00 47.78      B    C
ATOM   2335  CG  GLN   382      37.028  15.855   9.630  1.00 53.25      B    C
ATOM   2336  CD  GLN   382      36.169  15.571   8.438  1.00 56.07      B    C
ATOM   2337  OE1 GLN   382      35.414  16.443   7.989  1.00 58.19      B    O
ATOM   2338  NE2 GLN   382      36.269  14.345   7.905  1.00 57.86      B    N
ATOM   2339  C   GLN   382      37.155  14.172  13.041  1.00 47.35      B    C
ATOM   2340  O   GLN   382      38.134  13.492  13.362  1.00 49.75      B    O
ATOM   2341  N   SER   383      35.936  13.978  13.538  1.00 44.94      B    N
ATOM   2342  CA  SER   383      35.651  12.855  14.426  1.00 42.17      B    C
ATOM   2343  CB  SER   383      35.265  13.366  15.810  1.00 40.00      B    C
ATOM   2344  OG  SER   383      36.295  14.160  16.353  1.00 35.61      B    O
ATOM   2345  C   SER   383      34.550  11.933  13.903  1.00 41.99      B    C
ATOM   2346  O   SER   383      33.657  12.354  13.174  1.00 40.39      B    O
ATOM   2347  N   GLY   384      34.626  10.667  14.295  1.00 42.52      B    N
ATOM   2348  CA  GLY   384      33.608   9.706  13.907  1.00 42.23      B    C
ATOM   2349  C   GLY   384      34.158   8.293  13.905  1.00 41.28      B    C
ATOM   2350  O   GLY   384      35.375   8.104  13.941  1.00 39.89      B    O
ATOM   2351  N   THR   385      33.285   7.294  13.862  1.00 40.09      B    N
ATOM   2352  CA  THR   385      33.784   5.945  13.746  1.00 41.46      B    C
ATOM   2353  CB  THR   385      32.691   4.873  13.979  1.00 40.99      B    C
ATOM   2354  OG1 THR   385      31.490   5.217  13.268  1.00 41.65      B    O
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ATOM   2355  CG2 THR   385      32.414   4.731  15.454  1.00 41.03      B    C
ATOM   2356  C   THR   385      34.405   5.741  12.375  1.00 43.11      B    C
ATOM   2357  O   THR   385      35.218   4.836  12.187  1.00 45.39      B    O
ATOM   2358  N   SER   386      34.043   6.579  11.414  1.00 42.03      B    N
ATOM   2359  CA  SER   386      34.672   6.478  10.112  1.00 40.89      B    C
ATOM   2360  CB  SER   386      34.002   7.424   9.132  1.00 42.12      B    C
ATOM   2361  OG  SER   386      32.735   6.907   8.763  1.00 45.70      B    O
ATOM   2362  C   SER   386      36.167   6.760  10.182  1.00 39.87      B    C
ATOM   2363  O   SER   386      36.960   6.079   9.529  1.00 38.99      B    O
ATOM   2364  N   GLN   387      36.563   7.747  10.979  1.00 38.57      B    N
ATOM   2365  CA  GLN   387      37.986   8.019  11.164  1.00 38.45      B    C
ATOM   2366  CB  GLN   387      38.179   9.266  12.025  1.00 38.28      B    C
ATOM   2367  CG  GLN   387      37.233  10.404  11.670  1.00 37.87      B    C
ATOM   2368  CD  GLN   387      37.271  10.745  10.198  1.00 37.13      B    C
ATOM   2369  OE1 GLN   387      38.334  10.910   9.629  1.00 41.19      B    O
ATOM   2370  NE2 GLN   387      36.107  10.849   9.575  1.00 38.64      B    N
ATOM   2371  C   GLN   387      38.641   6.810  11.846  1.00 38.88      B    C
ATOM   2372  O   GLN   387      39.767   6.427  11.518  1.00 39.69      B    O
ATOM   2373  N   ALA   388      37.922   6.199  12.786  1.00 37.00      B    N
ATOM   2374  CA  ALA   388      38.434   5.042  13.507  1.00 34.63      B    C
ATOM   2375  CB  ALA   388      37.467   4.654  14.623  1.00 31.74      B    C
ATOM   2376  C   ALA   388      38.647   3.865  12.556  1.00 34.56      B    C
ATOM   2377  O   ALA   388      39.647   3.155  12.640  1.00 35.06      B    O
ATOM   2378  N   ALA   389      37.702   3.657  11.648  1.00 34.57      B    N
ATOM   2379  CA  ALA   389      37.788   2.550  10.703  1.00 33.13      B    C
ATOM   2380  CB  ALA   389      36.454   2.356   9.991  1.00 32.48      B    C
ATOM   2381  C   ALA   389      38.883   2.795   9.680  1.00 33.71      B    C
ATOM   2382  O   ALA   389      39.514   1.855   9.214  1.00 34.66      B    O
ATOM   2383  N   ALA   390      39.109   4.056   9.319  1.00 34.06      B    N
ATOM   2384  CA  ALA   390      40.198   4.367   8.407  1.00 35.02      B    C
ATOM   2385  CB  ALA   390      40.296   5.872   8.210  1.00 32.15      B    C
ATOM   2386  C   ALA   390      41.523   3.795   8.973  1.00 35.11      B    C
ATOM   2387  O   ALA   390      42.236   3.071   8.279  1.00 33.97      B    O
ATOM   2388  N   HIS   391      41.820   4.092  10.238  1.00 34.71      B    N
ATOM   2389  CA  HIS   391      43.073   3.661  10.846  1.00 37.06      B    C
ATOM   2390  CB  HIS   391      43.133   4.076  12.321  1.00 37.89      B    C
ATOM   2391  CG  HIS   391      43.435   5.528  12.536  1.00 41.44      B    C
ATOM   2392  CD2 HIS   391      44.268   6.146  13.407  1.00 42.12      B    C
ATOM   2393  ND1 HIS   391      42.808   6.534  11.833  1.00 41.80      B    N
ATOM   2394  CE1 HIS   391      43.237   7.707  12.263  1.00 42.62      B    C
ATOM   2395  NE2 HIS   391      44.124   7.501  13.219  1.00 42.69      B    N
ATOM   2396  C   HIS   391      43.230   2.152  10.749  1.00 37.12      B    C
ATOM   2397  O   HIS   391      44.272   1.646  10.336  1.00 38.23      B    O
ATOM   2398  N   VAL   392      42.191   1.429  11.142  1.00 36.22      B    N
ATOM   2399  CA  VAL   392      42.251  -0.016  11.115  1.00 33.77      B    C
ATOM   2400  CB  VAL   392      40.988  -0.626  11.701  1.00 31.11      B    C
ATOM   2401  CG1 VAL   392      40.991  -2.135  11.491  1.00 27.16      B    C
ATOM   2402  CG2 VAL   392      40.905  -0.282  13.170  1.00 28.41      B    C
ATOM   2403  C   VAL   392      42.401  -0.488   9.681  1.00 34.43      B    C
ATOM   2404  O   VAL   392      43.086  -1.479   9.415  1.00 35.64      B    O
ATOM   2405  N   ALA   393      41.758   0.227   8.759  1.00 33.11      B    N
ATOM   2406  CA  ALA   393      41.821  -0.130   7.354  1.00 33.65      B    C
ATOM   2407  CB  ALA   393      40.934   0.809   6.525  1.00 31.34      B    C
ATOM   2408  C   ALA   393      43.278  -0.025   6.911  1.00 34.97      B    C
ATOM   2409  O   ALA   393      43.755  -0.830   6.105  1.00 33.98      B    O
ATOM   2410  N   GLY   394      43.977   0.969   7.454  1.00 35.70      B    N
ATOM   2411  CA  GLY   394      45.345   1.232   7.045  1.00 36.60      B    C
ATOM   2412  C   GLY   394      46.253   0.163   7.604  1.00 38.29      B    C
ATOM   2413  O   GLY   394      47.080  -0.405   6.887  1.00 37.89      B    O
ATOM   2414  N   ILE   395      46.080  -0.123   8.890  1.00 39.54      B    N
ATOM   2415  CA  ILE   395      46.869  -1.141   9.553  1.00 39.77      B    C
ATOM   2416  CB  ILE   395      46.439  -1.312  11.010  1.00 39.22      B    C
ATOM   2417  CG2 ILE   395      47.192  -2.480  11.636  1.00 36.68      B    C
ATOM   2418  CG1 ILE   395      46.666  -0.005  11.780  1.00 37.42      B    C
ATOM   2419  CD1 ILE   395      46.141  -0.037  13.210  1.00 34.61      B    C
ATOM   2420  C   ILE   395      46.634  -2.441   8.824  1.00 41.71      B    C
ATOM   2421  O   ILE   395      47.568  -3.143   8.476  1.00 43.58      B    O
ATOM   2422  N   ALA   396      45.376  -2.756   8.578  1.00 43.04      B    N
ATOM   2423  CA  ALA   396      45.054  -3.961   7.833  1.00 45.09      B    C
ATOM   2424  CB  ALA   396      43.574  -3.968   7.464  1.00 43.55      B    C
ATOM   2425  C   ALA   396      45.903  -4.019   6.573  1.00 46.33      B    C
ATOM   2426  O   ALA   396      46.203  -5.099   6.062  1.00 47.54      B    O
ATOM   2427  N   ALA   397      46.276  -2.844   6.073  1.00 48.10      B    N
ATOM   2428  CA  ALA   397      46.967  -2.743   4.797  1.00 49.04      B    C
ATOM   2429  CB  ALA   397      46.744  -1.374   4.195  1.00 47.71      B    C
ATOM   2430  C   ALA   397      48.454  -3.004   4.968  1.00 50.53      B    C
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ATOM   2431  O   ALA   397      49.049  -3.730   4.174  1.00 51.84      B    O
ATOM   2432  N   MET   398      49.045  -2.403   6.000  1.00 51.67      B    N
ATOM   2433  CA  MET   398      50.423  -2.682   6.388  1.00 53.66      B    C
ATOM   2434  CB  MET   398      50.750  -1.959   7.687  1.00 54.03      B    C
ATOM   2435  CG  MET   398      50.318  -0.514   7.716  1.00 56.66      B    C
ATOM   2436  SD  MET   398      51.552   0.591   7.036  1.00 60.87      B    S
ATOM   2437  CE  MET   398      51.735  -0.099   5.342  1.00 61.35      B    C
ATOM   2438  C   MET   398      50.607  -4.182   6.601  1.00 55.46      B    C
ATOM   2439  O   MET   398      51.606  -4.775   6.183  1.00 56.38      B    O
ATOM   2440  N   MET   399      49.624  -4.795   7.243  1.00 55.72      B    N
ATOM   2441  CA  MET   399      49.743  -6.179   7.642  1.00 56.05      B    C
ATOM   2442  CB  MET   399      48.808  -6.448   8.822  1.00 52.69      B    C
ATOM   2443  CG  MET   399      49.220  -5.660  10.083  1.00 49.75      B    C
ATOM   2444  SD  MET   399      48.186  -5.968  11.517  1.00 43.73      B    S
ATOM   2445  CE  MET   399      47.122  -7.288  10.807  1.00 41.37      B    C
ATOM   2446  C   MET   399      49.471  -7.141   6.496  1.00 58.09      B    C
ATOM   2447  O   MET   399      50.184  -8.123   6.328  1.00 60.78      B    O
ATOM   2448  N   LEU   400      48.444  -6.866   5.705  1.00 60.18      B    N
ATOM   2449  CA  LEU   400      48.212  -7.651   4.503  1.00 61.96      B    C
ATOM   2450  CB  LEU   400      46.845  -7.325   3.905  1.00 60.96      B    C
ATOM   2451  CG  LEU   400      45.716  -8.301   4.218  1.00 59.67      B    C
ATOM   2452  CD1 LEU   400      44.429  -7.814   3.591  1.00 59.61      B    C
ATOM   2453  CD2 LEU   400      46.061  -9.670   3.677  1.00 59.08      B    C
ATOM   2454  C   LEU   400      49.304  -7.349   3.483  1.00 65.48      B    C
ATOM   2455  O   LEU   400      49.422  -8.034   2.473  1.00 65.74      B    O
ATOM   2456  N   SER   401      50.103  -6.320   3.743  1.00 69.84      B    N
ATOM   2457  CA  SER   401      51.162  -5.956   2.811  1.00 75.12      B    C
ATOM   2458  CB  SER   401      51.500  -4.468   2.937  1.00 76.14      B    C
ATOM   2459  OG  SER   401      52.416  -4.065   1.931  1.00 82.39      B    O
ATOM   2460  C   SER   401      52.398  -6.791   3.112  1.00 77.81      B    C
ATOM   2461  O   SER   401      53.097  -7.239   2.197  1.00 77.60      B    O
ATOM   2462  N   ALA   402      52.659  -6.987   4.405  1.00 80.22      B    N
ATOM   2463  CA  ALA   402      53.724  -7.872   4.858  1.00 81.56      B    C
ATOM   2464  CB  ALA   402      53.906  -7.733   6.365  1.00 81.70      B    C
ATOM   2465  C   ALA   402      53.383  -9.318   4.492  1.00 83.56      B    C
ATOM   2466  O   ALA   402      54.068  -9.938   3.687  1.00 83.97      B    O
ATOM   2467  N   GLU   403      52.312  -9.846   5.071  1.00 86.39      B    N
ATOM   2468  CA  GLU   403      51.893 -11.207   4.781  1.00 90.62      B    C
ATOM   2469  CB  GLU   403      51.516 -11.935   6.072  1.00 94.08      B    C
ATOM   2470  CG  GLU   403      52.532 -11.811   7.195  1.00101.30      B    C
ATOM   2471  CD  GLU   403      52.184 -10.705   8.179  1.00105.07      B    C
ATOM   2472  OE1 GLU   403      51.312 -10.929   9.047  1.00107.17      B    O
ATOM   2473  OE2 GLU   403      52.782  -9.610   8.087  1.00107.51      B    O
ATOM   2474  C   GLU   403      50.694 -11.212   3.849  1.00 89.62      B    C
ATOM   2475  O   GLU   403      49.560 -11.324   4.298  1.00 89.74      B    O
ATOM   2476  N   PRO   404      50.930 -11.117   2.535  1.00 87.70      B    N
ATOM   2477  CD  PRO   404      52.238 -11.106   1.863  1.00 82.55      B    C
ATOM   2478  CA  PRO   404      49.823 -11.086   1.574  1.00 86.92      B    C
ATOM   2479  CB  PRO   404      50.514 -11.236   0.221  1.00 82.11      B    C
ATOM   2480  CG  PRO   404      51.883 -10.718   0.453  1.00 81.28      B    C
ATOM   2481  C   PRO   404      48.826 -12.201   1.817  1.00 86.62      B    C
ATOM   2482  O   PRO   404      47.623 -12.004   1.699  1.00 89.69      B    O
ATOM   2483  N   GLU   405      49.332 -13.376   2.170  1.00 84.71      B    N
ATOM   2484  CA  GLU   405      48.497 -14.571   2.216  1.00 82.30      B    C
ATOM   2485  CB  GLU   405      49.339 -15.811   1.885  1.00 83.56      B    C
ATOM   2486  CG  GLU   405      49.728 -15.903   0.415  1.00 84.66      B    C
ATOM   2487  CD  GLU   405      50.509 -17.162   0.076  1.00 86.54      B    C
ATOM   2488  OE1 GLU   405      51.337 -17.113  -0.862  1.00 86.91      B    O
ATOM   2489  OE2 GLU   405      50.294 -18.200   0.742  1.00 88.12      B    O
ATOM   2490  C   GLU   405      47.772 -14.756   3.549  1.00 80.19      B    C
ATOM   2491  O   GLU   405      47.171 -15.803   3.800  1.00 79.93      B    O
ATOM   2492  N   LEU   406      47.818 -13.740   4.402  1.00 78.24      B    N
ATOM   2493  CA  LEU   406      47.071 -13.795   5.648  1.00 76.72      B    C
ATOM   2494  CB  LEU   406      47.211 -12.484   6.410  1.00 74.80      B    C
ATOM   2495  CG  LEU   406      48.424 -12.421   7.327  1.00 74.00      B    C
ATOM   2496  CD1 LEU   406      48.719 -10.994   7.740  1.00 73.34      B    C
ATOM   2497  CD2 LEU   406      48.144 -13.286   8.529  1.00 74.12      B    C
ATOM   2498  C   LEU   406      45.605 -14.060   5.365  1.00 76.33      B    C
ATOM   2499  O   LEU   406      45.077 -13.652   4.330  1.00 77.41      B    O
ATOM   2500  N   THR   407      44.948 -14.748   6.291  1.00 75.06      B    N
ATOM   2501  CA  THR   407      43.540 -15.085   6.126  1.00 73.55      B    C
ATOM   2502  CB  THR   407      43.229 -16.503   6.668  1.00 72.50      B    C
ATOM   2503  OG1 THR   407      43.044 -16.453   8.088  1.00 70.12      B    O
ATOM   2504  CG2 THR   407      44.382 -17.435   6.372  1.00 70.92      B    C
ATOM   2505  C   THR   407      42.660 -14.080   6.866  1.00 73.16      B    C
ATOM   2506  O   THR   407      43.125 -13.364   7.762  1.00 71.83      B    O
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ATOM   2507  N   LEU   408      41.390 -14.039   6.472  1.00 72.79      B    N
ATOM   2508  CA  LEU   408      40.370 -13.276   7.176  1.00 71.72      B    C
ATOM   2509  CB  LEU   408      38.987 -13.813   6.797  1.00 70.47      B    C
ATOM   2510  CG  LEU   408      37.747 -12.922   6.920  1.00 69.40      B    C
ATOM   2511  CD1 LEU   408      37.916 -11.902   8.053  1.00 67.99      B    C
ATOM   2512  CD2 LEU   408      37.528 -12.232   5.584  1.00 69.52      B    C
ATOM   2513  C   LEU   408      40.589 -13.449   8.677  1.00 71.42      B    C
ATOM   2514  O   LEU   408      40.722 -12.474   9.419  1.00 71.69      B    O
ATOM   2515  N   ALA   409      40.640 -14.707   9.107  1.00 70.70      B    N
ATOM   2516  CA  ALA   409      40.632 -15.048  10.525  1.00 69.24      B    C
ATOM   2517  CB  ALA   409      40.137 -16.485  10.701  1.00 68.18      B    C
ATOM   2518  C   ALA   409      41.997 -14.867  11.192  1.00 68.50      B    C
ATOM   2519  O   ALA   409      42.080 -14.711  12.409  1.00 67.64      B    O
ATOM   2520  N   GLU   410      43.060 -14.882  10.394  1.00 68.72      B    N
ATOM   2521  CA  GLU   410      44.407 -14.683  10.918  1.00 69.75      B    C
ATOM   2522  CB  GLU   410      45.442 -15.290   9.970  1.00 69.56      B    C
ATOM   2523  CG  GLU   410      45.349 -16.800   9.836  1.00 70.17      B    C
ATOM   2524  CD  GLU   410      46.369 -17.356   8.868  1.00 70.08      B    C
ATOM   2525  OE1 GLU   410      46.232 -18.532   8.455  1.00 71.00      B    O
ATOM   2526  OE2 GLU   410      47.309 -16.610   8.521  1.00 70.53      B    O
ATOM   2527  C   GLU   410      44.734 -13.209  11.132  1.00 70.53      B    C
ATOM   2528  O   GLU   410      45.324 -12.838  12.151  1.00 70.22      B    O
ATOM   2529  N   LEU   411      44.362 -12.371  10.168  1.00 70.72      B    N
ATOM   2530  CA  LEU   411      44.614 -10.941  10.292  1.00 70.59      B    C
ATOM   2531  CB  LEU   411      44.163 -10.203   9.028  1.00 69.74      B    C
ATOM   2532  CG  LEU   411      44.300  -8.676   8.969  1.00 67.81      B    C
ATOM   2533  CD1 LEU   411      44.390  -8.235   7.528  1.00 66.98      B    C
ATOM   2534  CD2 LEU   411      43.113  -8.014   9.634  1.00 67.36      B    C
ATOM   2535  C   LEU   411      43.821 -10.460  11.484  1.00 71.74      B    C
ATOM   2536  O   LEU   411      44.301  -9.662  12.289  1.00 71.67      B    O
ATOM   2537  N   ARG   412      42.603 -10.970  11.597  1.00 73.60      B    N
ATOM   2538  CA  ARG   412      41.745 -10.648  12.719  1.00 76.27      B    C
ATOM   2539  CB  ARG   412      40.459 -11.455  12.617  1.00 73.69      B    C
ATOM   2540  CG  ARG   412      39.320 -10.901  13.422  1.00 70.65      B    C
ATOM   2541  CD  ARG   412      38.098 -11.772  13.268  1.00 67.93      B    C
ATOM   2542  NE  ARG   412      36.875 -10.988  13.159  1.00 66.79      B    N
ATOM   2543  CZ  ARG   412      36.239 -10.764  12.017  1.00 66.69      B    C
ATOM   2544  NH1 ARG   412      35.130 -10.042  12.007  1.00 65.72      B    N
ATOM   2545  NH2 ARG   412      36.717 -11.264  10.885  1.00 68.01      B    N
ATOM   2546  C   ARG   412      42.488 -11.005  13.997  1.00 80.83      B    C
ATOM   2547  O   ARG   412      42.543 -10.216  14.930  1.00 80.65      B    O
ATOM   2548  N   GLN   413      43.077 -12.196  14.018  1.00 86.79      B    N
ATOM   2549  CA  GLN   413      43.835 -12.665  15.170  1.00 92.24      B    C
ATOM   2550  CB  GLN   413      44.276 -14.114  14.951  1.00 94.97      B    C
ATOM   2551  CG  GLN   413      44.915 -14.766  16.170  1.00 99.47      B    C
ATOM   2552  CD  GLN   413      44.028 -14.675  17.399  1.00102.34      B    C
ATOM   2553  OE1 GLN   413      44.204 -13.792  18.245  1.00103.95      B    O
ATOM   2554  NE2 GLN   413      43.062 -15.588  17.501  1.00104.17      B    N
ATOM   2555  C   GLN   413      45.062 -11.792  15.410  1.00 94.56      B    C
ATOM   2556  O   GLN   413      45.477 -11.580  16.550  1.00 95.17      B    O
ATOM   2557  N   ARG   414      45.638 -11.288  14.324  1.00 97.12      B    N
ATOM   2558  CA  ARG   414      46.857 -10.498  14.405  1.00 98.76      B    C
ATOM   2559  CB  ARG   414      47.512 -10.401  13.029  1.00101.11      B    C
ATOM   2560  CG  ARG   414      48.259 -11.653  12.624  1.00104.98      B    C
ATOM   2561  CD  ARG   414      49.105 -11.403  11.395  1.00109.69      B    C
ATOM   2562  NE  ARG   414      50.249 -12.307  11.305  1.00114.56      B    N
ATOM   2563  CZ  ARG   414      50.158 -13.631  11.227  1.00118.01      B    C
ATOM   2564  NH1 ARG   414      48.968 -14.220  11.233  1.00120.46      B    N
ATOM   2565  NH2 ARG   414      51.258 -14.367  11.131  1.00120.17      B    N
ATOM   2566  C   ARG   414      46.611  -9.102  14.950  1.00 98.39      B    C
ATOM   2567  O   ARG   414      47.365  -8.619  15.794  1.00 98.42      B    O
ATOM   2568  N   LEU   415      45.556  -8.457  14.465  1.00 98.39      B    N
ATOM   2569  CA  LEU   415      45.194  -7.126  14.934  1.00 99.38      B    C
ATOM   2570  CB  LEU   415      43.926  -6.639  14.239  1.00 96.98      B    C
ATOM   2571  CG  LEU   415      44.046  -6.188  12.784  1.00 94.64      B    C
ATOM   2572  CD1 LEU   415      42.667  -5.991  12.184  1.00 93.57      B    C
ATOM   2573  CD2 LEU   415      44.838  -4.905  12.725  1.00 93.89      B    C
ATOM   2574  C   LEU   415      44.964  -7.142  16.430  1.00102.00      B    C
ATOM   2575  O   LEU   415      45.363  -6.224  17.130  1.00100.71      B    O
ATOM   2576  N   ILE   416      44.325  -8.200  16.916  1.00106.93      B    N
ATOM   2577  CA  ILE   416      43.995  -8.306  18.332  1.00111.24      B    C
ATOM   2578  CB  ILE   416      43.220  -9.593  18.642  1.00109.49      B    C
ATOM   2579  CG2 ILE   416      42.848  -9.620  20.110  1.00107.39      B    C
ATOM   2580  CG1 ILE   416      41.958  -9.668  17.789  1.00109.48      B    C
ATOM   2581  CD1 ILE   416      41.160 -10.926  18.002  1.00110.78      B    C
ATOM   2582  C   ILE   416      45.253  -8.319  19.179  1.00114.47      B    C
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ATOM   2583  O   ILE   416      45.367  -7.568  20.146  1.00117.39      B     O
ATOM   2584  N   HIS   417      46.195  -9.181  18.812  1.00116.77      B     N
ATOM   2585  CA  HIS   417      47.420  -9.315  19.578  1.00117.72      B     C
ATOM   2586  CB  HIS   417      48.350 -10.343  18.929  1.00124.49      B     C
ATOM   2587  CG  HIS   417      49.677 -10.471  19.611  1.00130.81      B     C
ATOM   2588  CD2 HIS   417      50.035 -11.091  20.760  1.00133.74      B     C
ATOM   2589  ND1 HIS   417      50.829  -9.905  19.107  1.00133.21      B     N
ATOM   2590  CE1 HIS   417      51.839 -10.170  19.916  1.00135.24      B     C
ATOM   2591  NE2 HIS   417      51.384 -10.888  20.928  1.00135.71      B     N
ATOM   2592  C   HIS   417      48.125  -7.976  19.669  1.00115.09      B     C
ATOM   2593  O   HIS   417      48.408  -7.491  20.761  1.00113.36      B     O
ATOM   2594  N   PHE   418      48.394  -7.371  18.517  1.00112.88      B     N
ATOM   2595  CA  PHE   418      49.206  -6.162  18.469  1.00110.87      B     C
ATOM   2596  CB  PHE   418      49.750  -5.943  17.059  1.00115.25      B     C
ATOM   2597  CG  PHE   418      51.070  -6.611  16.814  1.00121.12      B     C
ATOM   2598  CD1 PHE   418      51.145  -7.792  16.098  1.00123.17      B     C
ATOM   2599  CD2 PHE   418      52.238  -6.059  17.312  1.00123.35      B     C
ATOM   2600  CE1 PHE   418      52.359  -8.408  15.884  1.00125.37      B     C
ATOM   2601  CE2 PHE   418      53.456  -6.672  17.101  1.00125.90      B     C
ATOM   2602  CZ  PHE   418      53.514  -7.852  16.383  1.00126.36      B     C
ATOM   2603  C   PHE   418      48.472  -4.913  18.927  1.00106.04      B     C
ATOM   2604  O   PHE   418      49.033  -3.820  18.896  1.00106.28      B     O
ATOM   2605  N   SER   419      47.224  -5.084  19.353  1.00 99.46      B     N
ATOM   2606  CA  SER   419      46.413  -3.987  19.875  1.00 92.29      B     C
ATOM   2607  CB  SER   419      44.937  -4.359  19.839  1.00 90.97      B     C
ATOM   2608  OG  SER   419      44.506  -4.607  18.522  1.00 89.32      B     O
ATOM   2609  C   SER   419      46.781  -3.652  21.311  1.00 88.83      B     C
ATOM   2610  O   SER   419      46.976  -4.547  22.124  1.00 89.15      B     O
ATOM   2611  N   ALA   420      46.858  -2.363  21.627  1.00 85.37      B     N
ATOM   2612  CA  ALA   420      47.016  -1.927  23.010  1.00 81.97      B     C
ATOM   2613  CB  ALA   420      47.044  -0.406  23.082  1.00 81.91      B     C
ATOM   2614  C   ALA   420      45.842  -2.469  23.816  1.00 79.89      B     C
ATOM   2615  O   ALA   420      44.713  -2.475  23.330  1.00 79.29      B     O
ATOM   2616  N   LYS   421      46.100  -2.926  25.039  1.00 77.60      B     N
ATOM   2617  CA  LYS   421      45.101  -3.706  25.762  1.00 76.65      B     C
ATOM   2618  CB  LYS   421      45.629  -5.120  26.005  1.00 75.21      B     C
ATOM   2619  CG  LYS   421      46.034  -5.842  24.730  1.00 74.25      B     C
ATOM   2620  CD  LYS   421      45.404  -7.221  24.634  1.00 72.30      B     C
ATOM   2621  CE  LYS   421      45.912  -7.973  23.414  1.00 71.65      B     C
ATOM   2622  NZ  LYS   421      47.403  -7.974  23.350  1.00 69.08      B     N
ATOM   2623  C   LYS   421      44.606  -3.108  27.080  1.00 76.30      B     C
ATOM   2624  O   LYS   421      45.388  -2.590  27.874  1.00 75.81      B     O
ATOM   2625  N   ASP   422      43.292  -3.193  27.291  1.00 76.07      B     N
ATOM   2626  CA  ASP   422      42.654  -2.840  28.557  1.00 75.90      B     C
ATOM   2627  CB  ASP   422      43.025  -3.859  29.635  1.00 76.51      B     C
ATOM   2628  CG  ASP   422      42.547  -5.259  29.293  1.00 77.29      B     C
ATOM   2629  OD1 ASP   422      41.496  -5.684  29.823  1.00 77.24      B     O
ATOM   2630  OD2 ASP   422      43.218  -5.936  28.485  1.00 78.52      B     O
ATOM   2631  C   ASP   422      42.978  -1.434  29.032  1.00 75.72      B     C
ATOM   2632  O   ASP   422      43.111  -1.185  30.231  1.00 75.77      B     O
ATOM   2633  N   VAL   423      43.094  -0.516  28.078  1.00 75.77      B     N
ATOM   2634  CA  VAL   423      43.330   0.893  28.373  1.00 75.46      B     C
ATOM   2635  CB  VAL   423      44.279   1.529  27.323  1.00 74.23      B     C
ATOM   2636  CG1 VAL   423      45.572   0.739  27.256  1.00 73.29      B     C
ATOM   2637  CG2 VAL   423      43.616   1.555  25.953  1.00 72.59      B     C
ATOM   2638  C   VAL   423      42.008   1.666  28.385  1.00 75.67      B     C
ATOM   2639  O   VAL   423      41.911   2.734  28.997  1.00 75.74      B     O
ATOM   2640  N   ILE   424      40.999   1.118  27.706  1.00 74.56      B     N
ATOM   2641  CA  ILE   424      39.674   1.733  27.641  1.00 74.42      B     C
ATOM   2642  CB  ILE   424      38.810   1.097  26.512  1.00 73.36      B     C
ATOM   2643  CG2 ILE   424      37.506   1.865  26.345  1.00 74.09      B     C
ATOM   2644  CG1 ILE   424      39.558   1.125  25.183  1.00 71.55      B     C
ATOM   2645  CD1 ILE   424      38.737   0.586  24.031  1.00 68.53      B     C
ATOM   2646  C   ILE   424      38.934   1.526  28.969  1.00 74.42      B     C
ATOM   2647  O   ILE   424      38.736   0.384  29.397  1.00 74.56      B     O
ATOM   2648  N   ASN   425      38.516   2.612  29.618  1.00 73.22      B     N
ATOM   2649  CA  ASN   425      37.707   2.466  30.822  1.00 73.77      B     C
ATOM   2650  CB  ASN   425      37.545   3.803  31.550  1.00 72.83      B     C
ATOM   2651  CG  ASN   425      36.794   3.659  32.863  1.00 71.81      B     C
ATOM   2652  OD1 ASN   425      35.814   2.925  32.949  1.00 72.71      B     O
ATOM   2653  ND2 ASN   425      37.258   4.350  33.891  1.00 71.45      B     N
ATOM   2654  C   ASN   425      36.338   1.944  30.426  1.00 74.65      B     C
ATOM   2655  O   ASN   425      35.618   2.603  29.686  1.00 74.07      B     O
ATOM   2656  N   GLU   426      35.976   0.766  30.924  1.00 76.81      B     N
ATOM   2657  CA  GLU   426      34.741   0.111  30.501  1.00 79.15      B     C
ATOM   2658  CB  GLU   426      34.712  -1.337  30.986  1.00 80.99      B     C
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ATOM   2659  CG  GLU   426      35.579  -2.282  30.184  1.00 83.84      B    C
ATOM   2660  CD  GLU   426      35.147  -3.729  30.345  1.00 86.17      B    C
ATOM   2661  OE1 GLU   426      35.400  -4.529  29.418  1.00 87.57      B    O
ATOM   2662  OE2 GLU   426      34.551  -4.063  31.395  1.00 85.46      B    O
ATOM   2663  C   GLU   426      33.480   0.824  30.984  1.00 79.50      B    C
ATOM   2664  O   GLU   426      32.386   0.569  30.474  1.00 80.47      B    O
ATOM   2665  N   ALA   427      33.637   1.722  31.956  1.00 78.27      B    N
ATOM   2666  CA  ALA   427      32.501   2.376  32.599  1.00 76.26      B    C
ATOM   2667  CB  ALA   427      32.936   2.969  33.924  1.00 75.03      B    C
ATOM   2668  C   ALA   427      31.835   3.452  31.740  1.00 75.60      B    C
ATOM   2669  O   ALA   427      30.987   4.205  32.224  1.00 75.77      B    O
ATOM   2670  N   TRP   428      32.226   3.530  30.473  1.00 74.75      B    N
ATOM   2671  CA  TRP   428      31.555   4.397  29.512  1.00 74.44      B    C
ATOM   2672  CB  TRP   428      32.542   4.811  28.423  1.00 74.02      B    C
ATOM   2673  CG  TRP   428      32.114   5.942  27.534  1.00 73.99      B    C
ATOM   2674  CD2 TRP   428      31.476   5.843  26.247  1.00 74.18      B    C
ATOM   2675  CE2 TRP   428      31.407   7.143  25.715  1.00 73.61      B    C
ATOM   2676  CE3 TRP   428      30.968   4.781  25.492  1.00 74.77      B    C
ATOM   2677  CD1 TRP   428      32.379   7.258  27.723  1.00 73.84      B    C
ATOM   2678  NE1 TRP   428      31.963   7.988  26.637  1.00 74.39      B    N
ATOM   2679  CZ2 TRP   428      30.853   7.414  24.462  1.00 72.79      B    C
ATOM   2680  CZ3 TRP   428      30.417   5.055  24.245  1.00 74.68      B    C
ATOM   2681  CH2 TRP   428      30.367   6.362  23.746  1.00 73.12      B    C
ATOM   2682  C   TRP   428      30.424   3.579  28.905  1.00 74.60      B    C
ATOM   2683  O   TRP   428      29.370   4.106  28.555  1.00 73.81      B    O
ATOM   2684  N   PHE   429      30.656   2.276  28.799  1.00 75.15      B    N
ATOM   2685  CA  PHE   429      29.715   1.370  28.146  1.00 76.08      B    C
ATOM   2686  CB  PHE   429      30.447   0.117  27.654  1.00 75.20      B    C
ATOM   2687  CG  PHE   429      31.632   0.409  26.773  1.00 73.39      B    C
ATOM   2688  CD1 PHE   429      32.897  -0.041  27.119  1.00 72.50      B    C
ATOM   2689  CD2 PHE   429      31.478   1.127  25.594  1.00 72.64      B    C
ATOM   2690  CE1 PHE   429      33.989   0.214  26.304  1.00 71.63      B    C
ATOM   2691  CE2 PHE   429      32.562   1.386  24.775  1.00 72.20      B    C
ATOM   2692  CZ  PHE   429      33.822   0.928  25.131  1.00 71.45      B    C
ATOM   2693  C   PHE   429      28.588   0.958  29.083  1.00 76.15      B    C
ATOM   2694  O   PHE   429      28.820   0.627  30.242  1.00 76.42      B    O
ATOM   2695  N   PRO   430      27.346   0.961  28.587  1.00 76.64      B    N
ATOM   2696  CD  PRO   430      26.911   1.204  27.203  1.00 76.64      B    C
ATOM   2697  CA  PRO   430      26.237   0.571  29.458  1.00 78.80      B    C
ATOM   2698  CB  PRO   430      25.006   0.663  28.549  1.00 77.13      B    C
ATOM   2699  CG  PRO   430      25.536   0.602  27.168  1.00 76.00      B    C
ATOM   2700  C   PRO   430      26.445  -0.825  30.039  1.00 80.99      B    C
ATOM   2701  O   PRO   430      26.865  -1.747  29.341  1.00 81.23      B    O
ATOM   2702  N   GLU   431      26.140  -0.961  31.325  1.00 83.65      B    N
ATOM   2703  CA  GLU   431      26.550  -2.107  32.130  1.00 85.46      B    C
ATOM   2704  CB  GLU   431      25.639  -2.199  33.363  1.00 89.78      B    C
ATOM   2705  CG  GLU   431      26.071  -3.227  34.405  1.00 95.94      B    C
ATOM   2706  CD  GLU   431      25.317  -3.091  35.721  1.00 98.87      B    C
ATOM   2707  OE1 GLU   431      25.879  -3.512  36.758  1.00100.92      B    O
ATOM   2708  OE2 GLU   431      24.174  -2.570  35.717  1.00100.66      B    O
ATOM   2709  C   GLU   431      26.569  -3.446  31.388  1.00 83.87      B    C
ATOM   2710  O   GLU   431      27.593  -4.133  31.337  1.00 83.49      B    O
ATOM   2711  N   ASP   432      25.429  -3.799  30.808  1.00 81.63      B    N
ATOM   2712  CA  ASP   432      25.220  -5.121  30.232  1.00 79.14      B    C
ATOM   2713  CB  ASP   432      23.722  -5.335  29.977  1.00 79.86      B    C
ATOM   2714  CG  ASP   432      22.998  -4.047  29.596  1.00 79.96      B    C
ATOM   2715  OD1 ASP   432      23.092  -3.046  30.346  1.00 79.78      B    O
ATOM   2716  OD2 ASP   432      22.329  -4.039  28.542  1.00 79.18      B    O
ATOM   2717  C   ASP   432      26.009  -5.339  28.944  1.00 77.30      B    C
ATOM   2718  O   ASP   432      26.070  -6.451  28.413  1.00 76.75      B    O
ATOM   2719  N   GLN   433      26.612  -4.268  28.445  1.00 75.05      B    N
ATOM   2720  CA  GLN   433      27.378  -4.327  27.213  1.00 72.42      B    C
ATOM   2721  CB  GLN   433      27.122  -3.074  26.375  1.00 71.49      B    C
ATOM   2722  CG  GLN   433      25.835  -3.110  25.591  1.00 70.56      B    C
ATOM   2723  CD  GLN   433      25.896  -4.114  24.468  1.00 71.25      B    C
ATOM   2724  OE1 GLN   433      24.888  -4.442  23.845  1.00 71.67      B    O
ATOM   2725  NE2 GLN   433      27.091  -4.615  24.204  1.00 72.06      B    N
ATOM   2726  C   GLN   433      28.867  -4.461  27.484  1.00 71.41      B    C
ATOM   2727  O   GLN   433      29.608  -4.934  26.627  1.00 71.95      B    O
ATOM   2728  N   ARG   434      29.296  -4.047  28.675  1.00 69.73      B    N
ATOM   2729  CA  ARG   434      30.717  -3.900  28.985  1.00 68.37      B    C
ATOM   2730  CB  ARG   434      30.900  -3.423  30.424  1.00 68.00      B    C
ATOM   2731  CG  ARG   434      30.438  -2.003  30.678  1.00 68.67      B    C
ATOM   2732  CD  ARG   434      31.044  -1.449  31.956  1.00 69.05      B    C
ATOM   2733  NE  ARG   434      30.069  -0.678  32.713  1.00 70.49      B    N
ATOM   2734  CZ  ARG   434      29.112  -1.228  33.449  1.00 72.47      B    C
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ATOM   2735  NH1 ARG   434      28.255  -0.462  34.113  1.00 73.59      B    N
ATOM   2736  NH2 ARG   434      29.018  -2.551  33.521  1.00 73.57      B    N
ATOM   2737  C   ARG   434      31.510  -5.184  28.795  1.00 68.33      B    C
ATOM   2738  O   ARG   434      32.589  -5.180  28.190  1.00 68.56      B    O
ATOM   2739  N   VAL   435      30.981  -6.284  29.319  1.00 67.14      B    N
ATOM   2740  CA  VAL   435      31.681  -7.555  29.233  1.00 66.36      B    C
ATOM   2741  CB  VAL   435      30.884  -8.689  29.945  1.00 66.62      B    C
ATOM   2742  CG1 VAL   435      30.754  -8.367  31.431  1.00 64.88      B    C
ATOM   2743  CG2 VAL   435      29.498  -8.857  29.307  1.00 64.17      B    C
ATOM   2744  C   VAL   435      31.934  -7.936  27.776  1.00 65.17      B    C
ATOM   2745  O   VAL   435      32.990  -8.475  27.442  1.00 66.15      B    O
ATOM   2746  N   LEU   436      30.971  -7.635  26.910  1.00 63.04      B    N
ATOM   2747  CA  LEU   436      31.051  -8.010  25.497  1.00 61.71      B    C
ATOM   2748  CB  LEU   436      29.648  -7.993  24.871  1.00 62.24      B    C
ATOM   2749  CG  LEU   436      28.556  -8.820  25.561  1.00 61.83      B    C
ATOM   2750  CD1 LEU   436      27.225  -8.631  24.823  1.00 60.35      B    C
ATOM   2751  CD2 LEU   436      28.970 -10.294  25.593  1.00 60.07      B    C
ATOM   2752  C   LEU   436      31.976  -7.099  24.675  1.00 59.12      B    C
ATOM   2753  O   LEU   436      32.655  -7.554  23.759  1.00 57.04      B    O
ATOM   2754  N   THR   437      31.988  -5.812  25.000  1.00 57.08      B    N
ATOM   2755  CA  THR   437      32.728  -4.844  24.207  1.00 56.21      B    C
ATOM   2756  CB  THR   437      32.403  -3.415  24.648  1.00 53.88      B    C
ATOM   2757  OG1 THR   437      31.009  -3.163  24.442  1.00 55.23      B    O
ATOM   2758  CG2 THR   437      33.216  -2.426  23.858  1.00 50.77      B    C
ATOM   2759  C   THR   437      34.229  -5.064  24.338  1.00 55.95      B    C
ATOM   2760  O   THR   437      34.822  -4.747  25.374  1.00 56.67      B    O
ATOM   2761  N   PRO   438      34.862  -5.596  23.274  1.00 54.46      B    N
ATOM   2762  CD  PRO   438      34.210  -5.902  21.990  1.00 54.63      B    C
ATOM   2763  CA  PRO   438      36.283  -5.949  23.244  1.00 53.85      B    C
ATOM   2764  CB  PRO   438      36.515  -6.417  21.807  1.00 52.36      B    C
ATOM   2765  CG  PRO   438      35.187  -6.851  21.329  1.00 52.88      B    C
ATOM   2766  C   PRO   438      37.156  -4.764  23.581  1.00 54.24      B    C
ATOM   2767  O   PRO   438      37.476  -3.952  22.721  1.00 55.50      B    O
ATOM   2768  N   ASN   439      37.553  -4.658  24.835  1.00 54.28      B    N
ATOM   2769  CA  ASN   439      38.460  -3.600  25.203  1.00 54.38      B    C
ATOM   2770  CB  ASN   439      38.716  -3.662  26.700  1.00 53.17      B    C
ATOM   2771  CG  ASN   439      39.413  -2.438  27.206  1.00 52.95      B    C
ATOM   2772  OD1 ASN   439      40.452  -2.054  26.674  1.00 54.56      B    O
ATOM   2773  ND2 ASN   439      38.846  -1.804  28.233  1.00 52.08      B    N
ATOM   2774  C   ASN   439      39.769  -3.758  24.417  1.00 55.78      B    C
ATOM   2775  O   ASN   439      40.655  -4.519  24.814  1.00 57.73      B    O
ATOM   2776  N   LEU   440      39.877  -3.043  23.295  1.00 56.06      B    N
ATOM   2777  CA  LEU   440      41.041  -3.142  22.397  1.00 55.86      B    C
ATOM   2778  CB  LEU   440      40.833  -4.263  21.379  1.00 55.14      B    C
ATOM   2779  CG  LEU   440      41.127  -5.704  21.783  1.00 54.08      B    C
ATOM   2780  CD1 LEU   440      40.647  -6.666  20.684  1.00 51.94      B    C
ATOM   2781  CD2 LEU   440      42.614  -5.845  22.028  1.00 53.63      B    C
ATOM   2782  C   LEU   440      41.263  -1.837  21.627  1.00 56.41      B    C
ATOM   2783  O   LEU   440      40.359  -1.354  20.947  1.00 56.93      B    O
ATOM   2784  N   VAL   441      42.461  -1.271  21.717  1.00 56.47      B    N
ATOM   2785  CA  VAL   441      42.772  -0.074  20.944  1.00 56.91      B    C
ATOM   2786  CB  VAL   441      43.250   1.057  21.851  1.00 55.91      B    C
ATOM   2787  CG1 VAL   441      43.613   2.270  21.009  1.00 55.40      B    C
ATOM   2788  CG2 VAL   441      42.174   1.396  22.864  1.00 54.73      B    C
ATOM   2789  C   VAL   441      43.857  -0.357  19.916  1.00 58.09      B    C
ATOM   2790  O   VAL   441      45.021  -0.486  20.272  1.00 58.32      B    O
ATOM   2791  N   ALA   442      43.472  -0.433  18.643  1.00 60.35      B    N
ATOM   2792  CA  ALA   442      44.369  -0.877  17.576  1.00 62.99      B    C
ATOM   2793  CB  ALA   442      43.740  -0.611  16.219  1.00 62.78      B    C
ATOM   2794  C   ALA   442      45.743  -0.232  17.630  1.00 65.68      B    C
ATOM   2795  O   ALA   442      45.908   0.885  18.121  1.00 65.64      B    O
ATOM   2796  N   ALA   443      46.730  -0.952  17.113  1.00 69.73      B    N
ATOM   2797  CA  ALA   443      48.092  -0.449  17.028  1.00 74.87      B    C
ATOM   2798  CB  ALA   443      48.802  -0.639  18.356  1.00 70.53      B    C
ATOM   2799  C   ALA   443      48.838  -1.182  15.923  1.00 79.99      B    C
ATOM   2800  O   ALA   443      48.650  -2.383  15.726  1.00 81.17      B    O
ATOM   2801  N   LEU   444      49.677  -0.454  15.196  1.00 86.92      B    N
ATOM   2802  CA  LEU   444      50.523  -1.065  14.185  1.00 94.56      B    C
ATOM   2803  CB  LEU   444      51.269   0.016  13.404  1.00 91.22      B    C
ATOM   2804  CG  LEU   444      50.583   0.555  12.150  1.00 88.84      B    C
ATOM   2805  CD1 LEU   444      51.176   1.898  11.774  1.00 86.05      B    C
ATOM   2806  CD2 LEU   444      50.739  -0.447  11.017  1.00 85.93      B    C
ATOM   2807  C   LEU   444      51.523  -2.009  14.840  1.00100.27      B    C
ATOM   2808  O   LEU   444      51.990  -1.762  15.955  1.00101.97      B    O
ATOM   2809  N   PRO   445      51.854  -3.115  14.155  1.00102.71      B    N
ATOM   2810  CD  PRO   445      51.177  -3.601  12.942  1.00102.47      B    C
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ATOM   2811  CA  PRO   445      52.880  -4.056  14.611  1.00108.96      B     C
ATOM   2812  CB  PRO   445      52.808  -5.199  13.598  1.00103.83      B     C
ATOM   2813  CG  PRO   445      51.472  -5.072  12.969  1.00101.93      B     C
ATOM   2814  C   PRO   445      54.257  -3.416  14.618  1.00113.37      B     C
ATOM   2815  O   PRO   445      54.698  -2.856  13.611  1.00112.80      B     O
ATOM   2816  N   PRO   446      54.952  -3.485  15.760  1.00116.22      B     N
ATOM   2817  CD  PRO   446      54.384  -3.732  17.095  1.00119.98      B     C
ATOM   2818  CA  PRO   446      56.374  -3.135  15.797  1.00122.39      B     C
ATOM   2819  CB  PRO   446      56.702  -3.083  17.291  1.00122.57      B     C
ATOM   2820  CG  PRO   446      55.580  -3.813  17.975  1.00120.33      B     C
ATOM   2821  C   PRO   446      57.221  -4.149  15.017  1.00125.56      B     C
ATOM   2822  O   PRO   446      58.166  -3.766  14.326  1.00129.91      B     O
ATOM   2823  N   SER   447      56.864  -5.433  15.111  1.00131.30      B     N
ATOM   2824  CA  SER   447      57.519  -6.498  14.335  1.00136.24      B     C
ATOM   2825  CB  SER   447      58.228  -7.485  15.270  1.00141.23      B     C
ATOM   2826  OG  SER   447      57.298  -8.310  15.952  1.00144.06      B     O
ATOM   2827  C   SER   447      56.556  -7.277  13.423  1.00141.04      B     C
ATOM   2828  O   SER   447      55.822  -8.152  13.934  1.00131.68      B     O
ATOM   2829  OXT SER   447      56.535  -7.006  12.201  1.00113.76      B     O
TER    2830       SER   447                                              B
ATOM   2831  CB  GLU     1       3.711  32.350  16.970  1.00138.52      L31H  C
ATOM   2832  CG  GLU     1       3.439  33.848  16.919  1.00141.85      L31H  C
ATOM   2833  CD  GLU     1       4.640  34.640  16.438  1.00143.45      L31H  C
ATOM   2834  OE1 GLU     1       4.445  35.731  15.860  1.00143.83      L31H  O
ATOM   2835  OE2 GLU     1       5.780  34.170  16.635  1.00143.91      L31H  O
ATOM   2836  C   GLU     1       4.715  30.381  18.137  1.00130.94      L31H  C
ATOM   2837  O   GLU     1       4.120  29.647  17.346  1.00131.43      L31H  O
ATOM   2838  N   GLU     1       5.502  32.678  18.664  1.00135.71      L31H  N
ATOM   2839  CA  GLU     1       4.317  31.849  18.288  1.00134.83      L31H  C
ATOM   2840  N   SER     2       5.722  29.967  18.902  1.00125.13      L31H  N
ATOM   2841  CA  SER     2       6.323  28.637  18.781  1.00119.15      L31H  C
ATOM   2842  CB  SER     2       7.056  28.280  20.080  1.00120.98      L31H  C
ATOM   2843  OG  SER     2       6.217  28.431  21.212  1.00124.69      L31H  O
ATOM   2844  C   SER     2       5.320  27.539  18.440  1.00113.88      L31H  C
ATOM   2845  O   SER     2       4.159  27.597  18.849  1.00112.42      L31H  O
ATOM   2846  N   VAL     3       5.771  26.538  17.688  1.00107.83      L31H  N
ATOM   2847  CA  VAL     3       4.917  25.405  17.342  1.00101.42      L31H  C
ATOM   2848  CB  VAL     3       5.242  24.870  15.924  1.00101.94      L31H  C
ATOM   2849  CG1 VAL     3       6.704  24.464  15.839  1.00102.39      L31H  C
ATOM   2850  CG2 VAL     3       4.319  23.704  15.579  1.00102.00      L31H  C
ATOM   2851  C   VAL     3       5.069  24.295  18.375  1.00 95.09      L31H  C
ATOM   2852  O   VAL     3       4.315  23.326  18.386  1.00 95.30      L31H  O
ATOM   2853  N   LEU     4       6.051  24.453  19.252  1.00 87.11      L31H  N
ATOM   2854  CA  LEU     4       6.090  23.680  20.483  1.00 80.33      L31H  C
ATOM   2855  CB  LEU     4       7.521  23.244  20.799  1.00 78.74      L31H  C
ATOM   2856  CG  LEU     4       8.079  22.079  19.989  1.00 75.03      L31H  C
ATOM   2857  CD1 LEU     4       9.349  21.583  20.651  1.00 73.88      L31H  C
ATOM   2858  CD2 LEU     4       7.052  20.973  19.908  1.00 73.52      L31H  C
ATOM   2859  C   LEU     4       5.547  24.506  21.646  1.00 76.28      L31H  C
ATOM   2860  O   LEU     4       6.084  25.570  21.962  1.00 74.35      L31H  O
ATOM   2861  N   THR     5       4.490  24.010  22.288  1.00 72.42      L31H  N
ATOM   2862  CA  THR     5       3.856  24.736  23.388  1.00 67.66      L31H  C
ATOM   2863  CB  THR     5       2.350  24.890  23.143  1.00 65.52      L31H  C
ATOM   2864  OG1 THR     5       1.842  23.672  22.591  1.00 64.87      L31H  O
ATOM   2865  CG2 THR     5       2.075  26.056  22.184  1.00 64.39      L31H  C
ATOM   2866  C   THR     5       4.069  24.115  24.761  1.00 65.49      L31H  C
ATOM   2867  O   THR     5       3.962  22.903  24.936  1.00 65.15      L31H  O
ATOM   2868  N   GLN     6       4.378  24.969  25.730  1.00 64.29      L31H  N
ATOM   2869  CA  GLN     6       4.589  24.555  27.114  1.00 63.73      L31H  C
ATOM   2870  CB  GLN     6       6.057  24.170  27.326  1.00 61.83      L31H  C
ATOM   2871  CG  GLN     6       7.018  25.346  27.379  1.00 59.76      L31H  C
ATOM   2872  CD  GLN     6       8.361  25.017  26.745  1.00 60.41      L31H  C
ATOM   2873  OE1 GLN     6       8.433  24.730  25.554  1.00 61.76      L31H  O
ATOM   2874  NE2 GLN     6       9.430  25.056  27.540  1.00 58.87      L31H  N
ATOM   2875  C   GLN     6       4.202  25.692  28.074  1.00 64.47      L31H  C
ATOM   2876  O   GLN     6       4.228  26.867  27.702  1.00 64.01      L31H  O
ATOM   2877  N   PRO     7       3.861  25.353  29.330  1.00 66.46      L31H  N
ATOM   2878  CD  PRO     7       4.220  24.113  30.038  1.00 67.84      L31H  C
ATOM   2879  CA  PRO     7       3.326  26.353  30.254  1.00 65.35      L31H  C
ATOM   2880  CB  PRO     7       3.116  25.574  31.547  1.00 65.91      L31H  C
ATOM   2881  CG  PRO     7       4.129  24.508  31.494  1.00 67.09      L31H  C
ATOM   2882  C   PRO     7       4.305  27.496  30.442  1.00 64.17      L31H  C
ATOM   2883  O   PRO     7       5.506  27.349  30.222  1.00 65.08      L31H  O
ATOM   2884  N   PRO     8       3.791  28.663  30.834  1.00 63.81      L31H  N
ATOM   2885  CD  PRO     8       2.356  28.982  30.785  1.00 61.18      L31H  C
ATOM   2886  CA  PRO     8       4.604  29.855  31.085  1.00 63.42      L31H  C
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ATOM   2887  CB  PRO     8       3.577  30.996  31.075  1.00 61.24      L31H C
ATOM   2888  CG  PRO     8       2.367  30.419  30.395  1.00 60.71      L31H C
ATOM   2889  C   PRO     8       5.369  29.786  32.411  1.00 63.36      L31H C
ATOM   2890  O   PRO     8       6.443  30.382  32.568  1.00 63.66      L31H O
ATOM   2891  N   SER     9       4.798  29.062  33.365  1.00 63.25      L31H N
ATOM   2892  CA  SER     9       5.182  29.218  34.757  1.00 63.19      L31H C
ATOM   2893  CB  SER     9       4.466  30.446  35.350  1.00 60.99      L31H C
ATOM   2894  OG  SER     9       4.887  30.729  36.678  1.00 57.73      L31H O
ATOM   2895  C   SER     9       4.866  27.961  35.578  1.00 64.48      L31H C
ATOM   2896  O   SER     9       3.784  27.360  35.478  1.00 65.45      L31H O
ATOM   2897  N   VAL    10       5.837  27.556  36.382  1.00 63.89      L31H N
ATOM   2898  CA  VAL    10       5.607  26.517  37.362  1.00 63.42      L31H C
ATOM   2899  CB  VAL    10       6.233  25.170  36.910  1.00 63.39      L31H C
ATOM   2900  CG1 VAL    10       5.360  24.514  35.836  1.00 62.57      L31H C
ATOM   2901  CG2 VAL    10       7.633  25.415  36.349  1.00 63.77      L31H C
ATOM   2902  C   VAL    10       6.224  26.980  38.670  1.00 63.10      L31H C
ATOM   2903  O   VAL    10       6.939  27.989  38.708  1.00 62.36      L31H O
ATOM   2904  N   SER    11       5.917  26.258  39.741  1.00 63.31      L31H N
ATOM   2905  CA  SER    11       6.542  26.485  41.035  1.00 64.07      L31H C
ATOM   2906  CB  SER    11       6.227  27.894  41.545  1.00 65.21      L31H C
ATOM   2907  OG  SER    11       4.873  28.237  41.310  1.00 68.61      L31H O
ATOM   2908  C   SER    11       6.107  25.443  42.059  1.00 63.28      L31H C
ATOM   2909  O   SER    11       4.965  24.979  42.068  1.00 63.10      L31H O
ATOM   2910  N   GLY    12       7.055  25.064  42.903  1.00 62.91      L31H N
ATOM   2911  CA  GLY    12       6.799  24.139  43.992  1.00 62.96      L31H C
ATOM   2912  C   GLY    12       7.831  24.493  45.040  1.00 62.06      L31H C
ATOM   2913  O   GLY    12       8.833  25.129  44.706  1.00 62.73      L31H O
ATOM   2914  N   ALA    13       7.608  24.119  46.295  1.00 59.54      L31H N
ATOM   2915  CA  ALA    13       8.553  24.482  47.341  1.00 57.29      L31H C
ATOM   2916  CB  ALA    13       7.914  24.294  48.692  1.00 54.68      L31H C
ATOM   2917  C   ALA    13       9.824  23.627  47.217  1.00 57.41      L31H C
ATOM   2918  O   ALA    13       9.863  22.648  46.462  1.00 57.04      L31H O
ATOM   2919  N   PRO    14      10.891  24.000  47.938  1.00 56.71      L31H N
ATOM   2920  CD  PRO    14      11.122  25.236  48.702  1.00 56.70      L31H C
ATOM   2921  CA  PRO    14      12.071  23.137  47.937  1.00 57.23      L31H C
ATOM   2922  CB  PRO    14      13.043  23.867  48.860  1.00 57.17      L31H C
ATOM   2923  CG  PRO    14      12.608  25.283  48.806  1.00 55.90      L31H C
ATOM   2924  C   PRO    14      11.699  21.758  48.464  1.00 58.32      L31H C
ATOM   2925  O   PRO    14      10.950  21.646  49.432  1.00 58.21      L31H O
ATOM   2926  N   GLY    15      12.211  20.714  47.817  1.00 60.26      L31H N
ATOM   2927  CA  GLY    15      11.854  19.358  48.195  1.00 62.96      L31H C
ATOM   2928  C   GLY    15      10.772  18.728  47.332  1.00 65.28      L31H C
ATOM   2929  O   GLY    15      10.696  17.500  47.221  1.00 64.05      L31H O
ATOM   2930  N   GLN    16       9.936  19.560  46.710  1.00 68.62      L31H N
ATOM   2931  CA  GLN    16       8.802  19.065  45.926  1.00 71.60      L31H C
ATOM   2932  CB  GLN    16       7.661  20.072  45.957  1.00 75.87      L31H C
ATOM   2933  CG  GLN    16       6.908  20.112  47.252  1.00 82.09      L31H C
ATOM   2934  CD  GLN    16       5.727  21.055  47.177  1.00 87.55      L31H C
ATOM   2935  OE1 GLN    16       4.583  20.625  46.977  1.00 90.03      L31H O
ATOM   2936  NE2 GLN    16       5.994  22.355  47.326  1.00 89.14      L31H N
ATOM   2937  C   GLN    16       9.123  18.735  44.471  1.00 70.08      L31H C
ATOM   2938  O   GLN    16      10.101  19.220  43.902  1.00 69.52      L31H O
ATOM   2939  N   ARG    17       8.278  17.904  43.876  1.00 68.13      L31H N
ATOM   2940  CA  ARG    17       8.411  17.566  42.471  1.00 66.35      L31H C
ATOM   2941  CB  ARG    17       8.093  16.084  42.248  1.00 65.46      L31H C
ATOM   2942  CG  ARG    17       8.223  15.626  40.804  1.00 65.51      L31H C
ATOM   2943  CD  ARG    17       7.961  14.138  40.688  1.00 66.05      L31H C
ATOM   2944  NE  ARG    17       7.644  13.722  39.326  1.00 68.32      L31H N
ATOM   2945  CZ  ARG    17       6.444  13.852  38.764  1.00 71.52      L31H C
ATOM   2946  NH1 ARG    17       5.440  14.397  39.446  1.00 73.00      L31H N
ATOM   2947  NH2 ARG    17       6.239  13.418  37.526  1.00 72.19      L31H N
ATOM   2948  C   ARG    17       7.481  18.434  41.620  1.00 65.81      L31H C
ATOM   2949  O   ARG    17       6.403  18.850  42.068  1.00 64.65      L31H O
ATOM   2950  N   VAL    18       7.930  18.699  40.392  1.00 64.40      L31H N
ATOM   2951  CA  VAL    18       7.210  19.499  39.411  1.00 63.29      L31H C
ATOM   2952  CB  VAL    18       7.816  20.908  39.293  1.00 65.09      L31H C
ATOM   2953  CG1 VAL    18       7.832  21.588  40.648  1.00 65.44      L31H C
ATOM   2954  CG2 VAL    18       9.222  20.811  38.727  1.00 66.78      L31H C
ATOM   2955  C   VAL    18       7.320  18.827  38.044  1.00 62.02      L31H C
ATOM   2956  O   VAL    18       8.181  17.980  37.838  1.00 60.97      L31H O
ATOM   2957  N   THR    19       6.451  19.204  37.112  1.00 61.73      L31H N
ATOM   2958  CA  THR    19       6.657  18.845  35.712  1.00 61.82      L31H C
ATOM   2959  CB  THR    19       5.694  17.739  35.261  1.00 61.35      L31H C
ATOM   2960  OG1 THR    19       4.376  18.279  35.116  1.00 60.99      L31H O
ATOM   2961  CG2 THR    19       5.687  16.610  36.264  1.00 61.60      L31H C
ATOM   2962  C   THR    19       6.465  20.049  34.781  1.00 63.20      L31H C
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ATOM   2963  O   THR  19       5.754  21.002  35.124  1.00 64.11      L31H O
ATOM   2964  N   ILE  20       7.113  20.003  33.613  1.00 62.60      L31H N
ATOM   2965  CA  ILE  20       6.843  20.935  32.512  1.00 62.83      L31H C
ATOM   2966  CB  ILE  20       8.089  21.772  32.198  1.00 63.61      L31H C
ATOM   2967  CG2 ILE  20       7.815  22.690  31.032  1.00 65.17      L31H C
ATOM   2968  CG1 ILE  20       8.487  22.588  33.429  1.00 64.22      L31H C
ATOM   2969  CD1 ILE  20       9.698  23.492  33.213  1.00 64.62      L31H C
ATOM   2970  C   ILE  20       6.432  20.123  31.275  1.00 63.78      L31H C
ATOM   2971  O   ILE  20       6.787  18.945  31.162  1.00 62.92      L31H O
ATOM   2972  N   SER  21       5.682  20.729  30.354  1.00 64.09      L31H N
ATOM   2973  CA  SER  21       4.990  19.935  29.336  1.00 64.86      L31H C
ATOM   2974  CB  SER  21       3.536  19.776  29.754  1.00 63.74      L31H C
ATOM   2975  OG  SER  21       3.435  19.888  31.163  1.00 64.14      L31H O
ATOM   2976  C   SER  21       5.058  20.444  27.887  1.00 65.67      L31H C
ATOM   2977  O   SER  21       4.306  21.337  27.489  1.00 68.38      L31H O
ATOM   2978  N   CYS  22       5.945  19.842  27.099  1.00 64.14      L31H N
ATOM   2979  CA  CYS  22       6.069  20.125  25.671  1.00 63.02      L31H C
ATOM   2980  C   CYS  22       5.038  19.313  24.866  1.00 63.37      L31H C
ATOM   2981  O   CYS  22       5.077  18.080  24.848  1.00 62.28      L31H O
ATOM   2982  CB  CYS  22       7.483  19.755  25.210  1.00 61.52      L31H C
ATOM   2983  SG  CYS  22       8.208  20.677  23.808  1.00 61.05      L31H S
ATOM   2984  N   THR  23       4.117  20.005  24.202  1.00 64.37      L31H N
ATOM   2985  CA  THR  23       3.184  19.348  23.290  1.00 64.83      L31H C
ATOM   2986  CB  THR  23       1.713  19.709  23.634  1.00 65.15      L31H C
ATOM   2987  OG1 THR  23       1.553  21.133  23.655  1.00 65.49      L31H O
ATOM   2988  CG2 THR  23       1.337  19.152  25.006  1.00 65.92      L31H C
ATOM   2989  C   THR  23       3.492  19.757  21.852  1.00 64.35      L31H C
ATOM   2990  O   THR  23       3.929  20.882  21.596  1.00 64.00      L31H O
ATOM   2991  N   GLY  24       3.269  18.841  20.917  1.00 62.67      L31H N
ATOM   2992  CA  GLY  24       3.772  19.038  19.572  1.00 61.57      L31H C
ATOM   2993  C   GLY  24       2.763  18.800  18.472  1.00 61.13      L31H C
ATOM   2994  O   GLY  24       1.659  19.313  18.532  1.00 62.34      L31H O
ATOM   2995  N   SER  25       3.157  18.029  17.461  1.00 61.63      L31H N
ATOM   2996  CA  SER  25       2.299  17.697  16.319  1.00 62.41      L31H C
ATOM   2997  CB  SER  25       1.914  18.961  15.557  1.00 62.65      L31H C
ATOM   2998  OG  SER  25       2.996  19.425  14.770  1.00 64.84      L31H O
ATOM   2999  C   SER  25       3.025  16.737  15.362  1.00 62.86      L31H C
ATOM   3000  O   SER  25       4.250  16.601  15.416  1.00 63.34      L31H O
ATOM   3001  N   SER  26       2.274  16.092  14.474  1.00 62.26      L31H N
ATOM   3002  CA  SER  26       2.812  14.979  13.695  1.00 62.09      L31H C
ATOM   3003  CB  SER  26       1.695  14.304  12.899  1.00 62.24      L31H C
ATOM   3004  OG  SER  26       1.213  15.157  11.880  1.00 60.48      L31H O
ATOM   3005  C   SER  26       3.939  15.353  12.735  1.00 62.28      L31H C
ATOM   3006  O   SER  26       4.438  14.497  12.006  1.00 61.32      L31H O
ATOM   3007  N   SER  27       4.333  16.620  12.717  1.00 62.13      L31H N
ATOM   3008  CA  SER  27       5.432  17.031  11.854  1.00 61.96      L31H C
ATOM   3009  CB  SER  27       5.100  18.346  11.141  1.00 61.55      L31H C
ATOM   3010  OG  SER  27       5.675  19.458  11.804  1.00 57.20      L31H O
ATOM   3011  C   SER  27       6.732  17.180  12.642  1.00 61.99      L31H C
ATOM   3012  O   SER  27       7.776  17.510  12.072  1.00 62.44      L31H O
ATOM   3013  N   ASN  28       6.664  16.940  13.950  1.00 60.60      L31H N
ATOM   3014  CA  ASN  28       7.861  16.930  14.785  1.00 59.48      L31H C
ATOM   3015  CB  ASN  28       8.044  18.275  15.486  1.00 59.78      L31H C
ATOM   3016  CG  ASN  28       6.746  18.856  15.983  1.00 58.38      L31H C
ATOM   3017  OD1 ASN  28       6.023  19.505  15.235  1.00 58.36      L31H O
ATOM   3018  ND2 ASN  28       6.444  18.631  17.250  1.00 58.43      L31H N
ATOM   3019  C   ASN  28       7.858  15.830  15.822  1.00 59.65      L31H C
ATOM   3020  O   ASN  28       8.286  14.712  15.548  1.00 57.88      L31H O
ATOM   3021  N   ILE  29       7.377  16.151  17.019  1.00 61.65      L31H N
ATOM   3022  CA  ILE  29       7.398  15.196  18.123  1.00 64.05      L31H C
ATOM   3023  CB  ILE  29       6.712  15.764  19.384  1.00 63.61      L31H C
ATOM   3024  CG2 ILE  29       6.839  14.760  20.530  1.00 65.10      L31H C
ATOM   3025  CG1 ILE  29       7.353  17.093  19.781  1.00 63.17      L31H C
ATOM   3026  CD1 ILE  29       6.811  17.686  21.061  1.00 61.54      L31H C
ATOM   3027  C   ILE  29       6.686  13.904  17.730  1.00 65.35      L31H C
ATOM   3028  O   ILE  29       7.096  12.813  18.120  1.00 65.26      L31H O
ATOM   3029  N   GLY  30       5.617  14.043  16.953  1.00 66.80      L31H N
ATOM   3030  CA  GLY  30       4.897  12.886  16.472  1.00 69.29      L31H C
ATOM   3031  C   GLY  30       5.367  12.481  15.093  1.00 70.79      L31H C
ATOM   3032  O   GLY  30       4.609  11.920  14.308  1.00 73.79      L31H O
ATOM   3033  N   ALA  31       6.623  12.772  14.783  1.00 70.57      L31H N
ATOM   3034  CA  ALA  31       7.179  12.388  13.496  1.00 68.69      L31H C
ATOM   3035  CB  ALA  31       7.541  13.623  12.705  1.00 69.46      L31H C
ATOM   3036  C   ALA  31       8.405  11.502  13.689  1.00 67.46      L31H C
ATOM   3037  O   ALA  31       9.124  11.205  12.737  1.00 66.80      L31H O
ATOM   3038  N   GLY  32       8.634  11.081  14.930  1.00 65.06      L31H N
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ATOM   3039  CA  GLY    32       9.744  10.192  15.212  1.00 61.49      L31H C
ATOM   3040  C   GLY    32      10.998  10.939  15.632  1.00 60.15      L31H C
ATOM   3041  O   GLY    32      12.018  10.327  15.972  1.00 58.78      L31H O
ATOM   3042  N   TYR    33      10.923  12.268  15.608  1.00 57.00      L31H N
ATOM   3043  CA  TYR    33      12.055  13.103  15.974  1.00 52.69      L31H C
ATOM   3044  CB  TYR    33      11.947  14.450  15.255  1.00 50.83      L31H C
ATOM   3045  CG  TYR    33      11.990  14.315  13.741  1.00 49.75      L31H C
ATOM   3046  CD1 TYR    33      13.156  13.907  13.099  1.00 49.31      L31H C
ATOM   3047  CE1 TYR    33      13.196  13.721  11.729  1.00 48.18      L31H C
ATOM   3048  CD2 TYR    33      10.857  14.544  12.959  1.00 47.71      L31H C
ATOM   3049  CE2 TYR    33      10.886  14.359  11.583  1.00 47.03      L31H C
ATOM   3050  CZ  TYR    33      12.063  13.942  10.979  1.00 48.69      L31H C
ATOM   3051  OH  TYR    33      12.120  13.707   9.629  1.00 50.47      L31H O
ATOM   3052  C   TYR    33      12.064  13.272  17.487  1.00 50.76      L31H C
ATOM   3053  O   TYR    33      11.014  13.254  18.111  1.00 52.52      L31H O
ATOM   3054  N   ASP    34      13.251  13.407  18.074  1.00 48.14      L31H N
ATOM   3055  CA  ASP    34      13.417  13.437  19.531  1.00 45.26      L31H C
ATOM   3056  CB  ASP    34      14.791  12.898  19.920  1.00 45.18      L31H C
ATOM   3057  CG  ASP    34      14.910  11.409  19.734  1.00 44.74      L31H C
ATOM   3058  OD1 ASP    34      15.934  10.849  20.197  1.00 43.60      L31H O
ATOM   3059  OD2 ASP    34      13.989  10.803  19.133  1.00 45.00      L31H O
ATOM   3060  C   ASP    34      13.269  14.817  20.165  1.00 45.11      L31H C
ATOM   3061  O   ASP    34      13.605  15.849  19.564  1.00 44.68      L31H O
ATOM   3062  N   VAL    35      12.798  14.829  21.407  1.00 44.99      L31H N
ATOM   3063  CA  VAL    35      12.738  16.064  22.178  1.00 43.90      L31H C
ATOM   3064  CB  VAL    35      11.457  16.141  22.997  1.00 44.15      L31H C
ATOM   3065  CG1 VAL    35      11.532  17.331  23.965  1.00 43.72      L31H C
ATOM   3066  CG2 VAL    35      10.256  16.254  22.050  1.00 44.74      L31H C
ATOM   3067  C   VAL    35      13.908  16.221  23.128  1.00 43.44      L31H C
ATOM   3068  O   VAL    35      14.232  15.306  23.888  1.00 42.76      L31H O
ATOM   3069  N   HIS    36      14.534  17.393  23.075  1.00 43.03      L31H N
ATOM   3070  CA  HIS    36      15.642  17.736  23.956  1.00 42.46      L31H C
ATOM   3071  CB  HIS    36      16.868  18.136  23.124  1.00 42.43      L31H C
ATOM   3072  CG  HIS    36      17.111  17.275  21.912  1.00 43.91      L31H C
ATOM   3073  CD2 HIS    36      17.089  17.573  20.587  1.00 43.23      L31H C
ATOM   3074  ND1 HIS    36      17.489  15.948  21.995  1.00 43.31      L31H N
ATOM   3075  CE1 HIS    36      17.689  15.469  20.778  1.00 41.56      L31H C
ATOM   3076  NE2 HIS    36      17.454  16.435  19.906  1.00 41.42      L31H N
ATOM   3077  C   HIS    36      15.167  18.926  24.796  1.00 42.73      L31H C
ATOM   3078  O   HIS    36      14.271  19.649  24.363  1.00 44.22      L31H O
ATOM   3079  N   TRP    37      15.753  19.130  25.981  1.00 43.29      L31H N
ATOM   3080  CA  TRP    37      15.326  20.197  26.916  1.00 43.33      L31H C
ATOM   3081  CB  TRP    37      14.601  19.599  28.124  1.00 45.93      L31H C
ATOM   3082  CG  TRP    37      13.257  18.980  27.843  1.00 49.34      L31H C
ATOM   3083  CD2 TRP    37      11.982  19.600  28.015  1.00 50.13      L31H C
ATOM   3084  CE2 TRP    37      11.002  18.624  27.743  1.00 51.37      L31H C
ATOM   3085  CE3 TRP    37      11.571  20.888  28.378  1.00 52.24      L31H C
ATOM   3086  CD1 TRP    37      13.006  17.686  27.471  1.00 51.27      L31H C
ATOM   3087  NE1 TRP    37      11.651  17.465  27.412  1.00 51.06      L31H N
ATOM   3088  CZ2 TRP    37       9.640  18.895  27.826  1.00 52.35      L31H C
ATOM   3089  CZ3 TRP    37      10.220  21.154  28.457  1.00 52.72      L31H C
ATOM   3090  CH2 TRP    37       9.269  20.162  28.182  1.00 52.64      L31H C
ATOM   3091  C   TRP    37      16.485  21.044  27.457  1.00 43.28      L31H C
ATOM   3092  O   TRP    37      17.541  20.514  27.809  1.00 42.97      L31H O
ATOM   3093  N   TYR    38      16.285  22.355  27.560  1.00 43.01      L31H N
ATOM   3094  CA  TYR    38      17.362  23.232  28.014  1.00 43.05      L31H C
ATOM   3095  CB  TYR    38      17.771  24.181  26.901  1.00 38.88      L31H C
ATOM   3096  CG  TYR    38      18.088  23.478  25.624  1.00 33.77      L31H C
ATOM   3097  CD1 TYR    38      17.073  23.103  24.743  1.00 28.65      L31H C
ATOM   3098  CE1 TYR    38      17.364  22.421  23.583  1.00 25.10      L31H C
ATOM   3099  CD2 TYR    38      19.409  23.154  25.305  1.00 32.66      L31H C
ATOM   3100  CE2 TYR    38      19.713  22.476  24.144  1.00 29.28      L31H C
ATOM   3101  CZ  TYR    38      18.688  22.114  23.289  1.00 27.75      L31H C
ATOM   3102  OH  TYR    38      19.009  21.469  22.127  1.00 26.39      L31H O
ATOM   3103  C   TYR    38      17.007  24.056  29.234  1.00 46.95      L31H C
ATOM   3104  O   TYR    38      15.897  24.577  29.357  1.00 48.67      L31H O
ATOM   3105  N   GLN    39      17.974  24.192  30.127  1.00 49.84      L31H N
ATOM   3106  CA  GLN    39      17.837  25.060  31.281  1.00 52.09      L31H C
ATOM   3107  CB  GLN    39      18.437  24.377  32.506  1.00 52.21      L31H C
ATOM   3108  CG  GLN    39      18.538  25.261  33.725  1.00 54.03      L31H C
ATOM   3109  CD  GLN    39      19.329  24.604  34.840  1.00 55.27      L31H C
ATOM   3110  OE1 GLN    39      20.550  24.734  34.907  1.00 56.25      L31H O
ATOM   3111  NE2 GLN    39      18.635  23.892  35.722  1.00 55.16      L31H N
ATOM   3112  C   GLN    39      18.567  26.371  30.999  1.00 54.46      L31H C
ATOM   3113  O   GLN    39      19.650  26.382  30.401  1.00 52.58      L31H O
ATOM   3114  N   GLN    40      17.965  27.478  31.415  1.00 57.66      L31H N
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ATOM   3115  CA  GLN    40      18.592  28.779  31.254  1.00 61.56      L31H C
ATOM   3116  CB  GLN    40      17.964  29.560  30.092  1.00 59.03      L31H C
ATOM   3117  CG  GLN    40      18.774  30.790  29.713  1.00 56.95      L31H C
ATOM   3118  CD  GLN    40      18.186  31.591  28.563  1.00 56.21      L31H C
ATOM   3119  OE1 GLN    40      16.964  31.695  28.405  1.00 55.30      L31H O
ATOM   3120  NE2 GLN    40      19.066  32.175  27.756  1.00 53.83      L31H N
ATOM   3121  C   GLN    40      18.451  29.584  32.525  1.00 66.50      L31H C
ATOM   3122  O   GLN    40      17.384  30.123  32.813  1.00 66.89      L31H O
ATOM   3123  N   LEU    41      19.533  29.660  33.285  1.00 72.91      L31H N
ATOM   3124  CA  LEU    41      19.607  30.596  34.389  1.00 79.05      L31H C
ATOM   3125  CB  LEU    41      20.938  30.436  35.108  1.00 79.25      L31H C
ATOM   3126  CG  LEU    41      21.403  28.984  35.224  1.00 81.00      L31H C
ATOM   3127  CD1 LEU    41      22.063  28.530  33.916  1.00 80.82      L31H C
ATOM   3128  CD2 LEU    41      22.382  28.871  36.379  1.00 80.82      L31H C
ATOM   3129  C   LEU    41      19.507  31.980  33.773  1.00 82.23      L31H C
ATOM   3130  O   LEU    41      20.261  32.311  32.859  1.00 83.72      L31H O
ATOM   3131  N   PRO    42      18.562  32.803  34.251  1.00 83.71      L31H N
ATOM   3132  CD  PRO    42      17.570  32.557  35.313  1.00 84.10      L31H C
ATOM   3133  CA  PRO    42      18.400  34.127  33.646  1.00 84.51      L31H C
ATOM   3134  CB  PRO    42      17.306  34.780  34.497  1.00 83.82      L31H C
ATOM   3135  CG  PRO    42      16.529  33.621  35.057  1.00 83.24      L31H C
ATOM   3136  C   PRO    42      19.718  34.891  33.692  1.00 84.11      L31H C
ATOM   3137  O   PRO    42      20.413  34.884  34.709  1.00 84.12      L31H O
ATOM   3138  N   GLY    43      20.066  35.527  32.576  1.00 83.31      L31H N
ATOM   3139  CA  GLY    43      21.333  36.227  32.487  1.00 82.03      L31H C
ATOM   3140  C   GLY    43      22.437  35.422  31.823  1.00 81.46      L31H C
ATOM   3141  O   GLY    43      23.581  35.873  31.732  1.00 81.22      L31H O
ATOM   3142  N   THR    44      22.106  34.222  31.357  1.00 79.80      L31H N
ATOM   3143  CA  THR    44      23.093  33.409  30.668  1.00 75.75      L31H C
ATOM   3144  CB  THR    44      23.760  32.413  31.624  1.00 76.28      L31H C
ATOM   3145  OG1 THR    44      24.190  33.104  32.799  1.00 76.33      L31H O
ATOM   3146  CG2 THR    44      24.981  31.776  30.959  1.00 75.30      L31H C
ATOM   3147  C   THR    44      22.492  32.633  29.512  1.00 72.48      L31H C
ATOM   3148  O   THR    44      21.270  32.567  29.352  1.00 73.96      L31H O
ATOM   3149  N   ALA    45      23.375  32.048  28.709  1.00 66.86      L31H N
ATOM   3150  CA  ALA    45      22.990  31.144  27.635  1.00 60.76      L31H C
ATOM   3151  CB  ALA    45      24.237  30.700  26.885  1.00 57.60      L31H C
ATOM   3152  C   ALA    45      22.222  29.918  28.145  1.00 56.71      L31H C
ATOM   3153  O   ALA    45      22.384  29.485  29.294  1.00 54.89      L31H O
ATOM   3154  N   PRO    46      21.366  29.344  27.290  1.00 54.07      L31H N
ATOM   3155  CD  PRO    46      20.704  29.972  26.134  1.00 53.12      L31H C
ATOM   3156  CA  PRO    46      20.794  28.029  27.590  1.00 51.10      L31H C
ATOM   3157  CB  PRO    46      19.846  27.776  26.420  1.00 49.83      L31H C
ATOM   3158  CG  PRO    46      19.452  29.137  25.977  1.00 51.00      L31H C
ATOM   3159  C   PRO    46      21.872  26.961  27.708  1.00 48.33      L31H C
ATOM   3160  O   PRO    46      22.848  26.967  26.969  1.00 45.76      L31H O
ATOM   3161  N   LYS    47      21.696  26.059  28.665  1.00 46.26      L31H N
ATOM   3162  CA  LYS    47      22.559  24.902  28.792  1.00 43.92      L31H C
ATOM   3163  CB  LYS    47      23.201  24.875  30.189  1.00 45.52      L31H C
ATOM   3164  CG  LYS    47      23.152  23.519  30.910  1.00 48.84      L31H C
ATOM   3165  CD  LYS    47      23.908  23.554  32.248  1.00 49.89      L31H C
ATOM   3166  CE  LYS    47      23.940  22.169  32.922  1.00 54.13      L31H C
ATOM   3167  NZ  LYS    47      22.786  21.909  33.858  1.00 56.30      L31H N
ATOM   3168  C   LYS    47      21.695  23.671  28.560  1.00 42.72      L31H C
ATOM   3169  O   LYS    47      20.528  23.630  28.967  1.00 42.20      L31H O
ATOM   3170  N   LEU    48      22.256  22.680  27.875  1.00 41.33      L31H N
ATOM   3171  CA  LEU    48      21.549  21.423  27.651  1.00 39.44      L31H C
ATOM   3172  CB  LEU    48      22.369  20.515  26.729  1.00 36.39      L31H C
ATOM   3173  CG  LEU    48      21.898  19.070  26.538  1.00 33.98      L31H C
ATOM   3174  CD1 LEU    48      20.513  19.024  25.858  1.00 30.93      L31H C
ATOM   3175  CD2 LEU    48      22.951  18.338  25.716  1.00 31.01      L31H C
ATOM   3176  C   LEU    48      21.291  20.713  28.978  1.00 39.99      L31H C
ATOM   3177  O   LEU    48      22.205  20.573  29.813  1.00 37.73      L31H O
ATOM   3178  N   LEU    49      20.046  20.266  29.155  1.00 40.04      L31H N
ATOM   3179  CA  LEU    49      19.604  19.633  30.395  1.00 40.75      L31H C
ATOM   3180  CB  LEU    49      18.407  20.377  30.968  1.00 41.14      L31H C
ATOM   3181  CG  LEU    49      17.894  19.879  32.320  1.00 43.03      L31H C
ATOM   3182  CD1 LEU    49      18.888  20.293  33.442  1.00 40.83      L31H C
ATOM   3183  CD2 LEU    49      16.481  20.451  32.556  1.00 41.04      L31H C
ATOM   3184  C   LEU    49      19.197  18.181  30.196  1.00 42.11      L31H C
ATOM   3185  O   LEU    49      19.422  17.350  31.071  1.00 43.22      L31H O
ATOM   3186  N   ILE    50      18.567  17.889  29.060  1.00 42.58      L31H N
ATOM   3187  CA  ILE    50      18.181  16.526  28.714  1.00 43.24      L31H C
ATOM   3188  CB  ILE    50      16.872  16.118  29.406  1.00 43.38      L31H C
ATOM   3189  CG2 ILE    50      16.229  14.953  28.663  1.00 41.25      L31H C
ATOM   3190  CG1 ILE    50      17.156  15.752  30.855  1.00 42.23      L31H C
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ATOM   3191  CD1 ILE    50      16.212  14.721  31.385  1.00 43.01      L31H C
ATOM   3192  C   ILE    50      18.005  16.304  27.213  1.00 45.56      L31H C
ATOM   3193  O   ILE    50      17.188  16.973  26.569  1.00 43.85      L31H O
ATOM   3194  N   SER    51      18.759  15.340  26.673  1.00 48.30      L31H N
ATOM   3195  CA  SER    51      18.711  15.008  25.246  1.00 49.71      L31H C
ATOM   3196  CB  SER    51      20.130  14.952  24.675  1.00 49.26      L31H C
ATOM   3197  OG  SER    51      20.939  14.047  25.403  1.00 52.11      L31H O
ATOM   3198  C   SER    51      17.991  13.686  24.961  1.00 50.08      L31H C
ATOM   3199  O   SER    51      17.737  12.896  25.865  1.00 50.16      L31H O
ATOM   3200  N   GLY    52      17.648  13.468  23.695  1.00 51.31      L31H N
ATOM   3201  CA  GLY    52      17.056  12.209  23.284  1.00 52.07      L31H C
ATOM   3202  C   GLY    52      15.903  11.773  24.164  1.00 54.09      L31H C
ATOM   3203  O   GLY    52      15.778  10.590  24.499  1.00 54.32      L31H O
ATOM   3204  N   ASN    53      15.069  12.737  24.551  1.00 55.48      L31H N
ATOM   3205  CA  ASN    53      13.841  12.470  25.310  1.00 55.60      L31H C
ATOM   3206  CB  ASN    53      13.102  11.243  24.751  1.00 52.09      L31H C
ATOM   3207  CG  ASN    53      12.894  11.306  23.248  1.00 49.39      L31H C
ATOM   3208  OD1 ASN    53      12.568  12.353  22.692  1.00 50.31      L31H O
ATOM   3209  ND2 ASN    53      13.081  10.176  22.584  1.00 46.57      L31H N
ATOM   3210  C   ASN    53      14.102  12.245  26.799  1.00 56.53      L31H C
ATOM   3211  O   ASN    53      13.345  12.709  27.647  1.00 57.59      L31H O
ATOM   3212  N   SER    54      15.177  11.537  27.115  1.00 58.06      L31H N
ATOM   3213  CA  SER    54      15.289  10.921  28.421  1.00 59.90      L31H C
ATOM   3214  CB  SER    54      14.677   9.518  28.357  1.00 60.64      L31H C
ATOM   3215  OG  SER    54      15.248   8.732  27.315  1.00 59.19      L31H O
ATOM   3216  C   SER    54      16.709  10.844  29.000  1.00 62.28      L31H C
ATOM   3217  O   SER    54      16.905  10.242  30.055  1.00 62.32      L31H O
ATOM   3218  N   ASN    55      17.692  11.444  28.330  1.00 64.32      L31H N
ATOM   3219  CA  ASN    55      19.087  11.293  28.744  1.00 67.64      L31H C
ATOM   3220  CB  ASN    55      19.938  10.886  27.545  1.00 67.43      L31H C
ATOM   3221  CG  ASN    55      19.450   9.603  26.892  1.00 67.97      L31H C
ATOM   3222  OD1 ASN    55      19.565   8.509  27.458  1.00 66.43      L31H O
ATOM   3223  ND2 ASN    55      18.898   9.731  25.695  1.00 68.44      L31H N
ATOM   3224  C   ASN    55      19.700  12.524  29.401  1.00 69.95      L31H C
ATOM   3225  O   ASN    55      19.502  13.638  28.937  1.00 71.67      L31H O
ATOM   3226  N   ARG    56      20.457  12.307  30.477  1.00 72.79      L31H N
ATOM   3227  CA  ARG    56      21.089  13.387  31.238  1.00 75.45      L31H C
ATOM   3228  CB  ARG    56      20.883  13.179  32.739  1.00 77.48      L31H C
ATOM   3229  CG  ARG    56      19.439  13.153  33.188  1.00 83.20      L31H C
ATOM   3230  CD  ARG    56      19.324  12.706  34.637  1.00 88.80      L31H C
ATOM   3231  NE  ARG    56      19.736  11.315  34.816  1.00 95.67      L31H N
ATOM   3232  CZ  ARG    56      20.967  10.935  35.153  1.00 99.28      L31H C
ATOM   3233  NH1 ARG    56      21.260   9.643  35.293  1.00100.99      L31H N
ATOM   3234  NH2 ARG    56      21.908  11.851  35.352  1.00101.75      L31H N
ATOM   3235  C   ARG    56      22.587  13.481  30.978  1.00 75.94      L31H C
ATOM   3236  O   ARG    56      23.318  12.505  31.139  1.00 76.36      L31H O
ATOM   3237  N   PRO    57      23.070  14.668  30.586  1.00 76.18      L31H N
ATOM   3238  CD  PRO    57      22.322  15.811  30.039  1.00 75.75      L31H C
ATOM   3239  CA  PRO    57      24.519  14.895  30.545  1.00 77.03      L31H C
ATOM   3240  CB  PRO    57      24.656  16.255  29.859  1.00 75.92      L31H C
ATOM   3241  CG  PRO    57      23.346  16.482  29.176  1.00 75.20      L31H C
ATOM   3242  C   PRO    57      25.064  14.931  31.965  1.00 77.22      L31H C
ATOM   3243  O   PRO    57      24.490  15.587  32.832  1.00 78.83      L31H O
ATOM   3244  N   SER    58      26.166  14.232  32.208  1.00 76.68      L31H N
ATOM   3245  CA  SER    58      26.803  14.297  33.521  1.00 75.29      L31H C
ATOM   3246  CB  SER    58      28.198  13.664  33.488  1.00 75.46      L31H C
ATOM   3247  OG  SER    58      29.072  14.426  32.675  1.00 72.13      L31H O
ATOM   3248  C   SER    58      26.917  15.768  33.910  1.00 73.26      L31H C
ATOM   3249  O   SER    58      27.172  16.625  33.067  1.00 73.30      L31H O
ATOM   3250  N   GLY    59      26.732  16.046  35.192  1.00 71.02      L31H N
ATOM   3251  CA  GLY    59      26.434  17.396  35.623  1.00 66.74      L31H C
ATOM   3252  C   GLY    59      24.984  17.447  36.062  1.00 63.73      L31H C
ATOM   3253  O   GLY    59      24.676  17.851  37.181  1.00 63.24      L31H O
ATOM   3254  N   VAL    60      24.089  17.013  35.182  1.00 60.90      L31H N
ATOM   3255  CA  VAL    60      22.662  17.015  35.480  1.00 58.68      L31H C
ATOM   3256  CB  VAL    60      21.850  17.011  34.178  1.00 57.78      L31H C
ATOM   3257  CG1 VAL    60      20.391  17.176  34.475  1.00 56.47      L31H C
ATOM   3258  CG2 VAL    60      22.336  18.108  33.268  1.00 58.00      L31H C
ATOM   3259  C   VAL    60      22.277  15.789  36.325  1.00 58.24      L31H C
ATOM   3260  O   VAL    60      22.498  14.646  35.923  1.00 55.12      L31H O
ATOM   3261  N   PRO    61      21.706  16.023  37.519  1.00 58.08      L31H N
ATOM   3262  CD  PRO    61      21.552  17.349  38.137  1.00 57.75      L31H C
ATOM   3263  CA  PRO    61      21.353  14.951  38.459  1.00 58.26      L31H C
ATOM   3264  CB  PRO    61      21.030  15.696  39.760  1.00 58.11      L31H C
ATOM   3265  CG  PRO    61      21.652  17.034  39.600  1.00 58.28      L31H C
ATOM   3266  C   PRO    61      20.172  14.116  37.976  1.00 58.36      L31H C
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ATOM	3267	O	PRO	61	19.438	14.526	37.074	1.00	56.83	L31H O
ATOM	3268	N	ASP	62	19.991	12.947	38.579	1.00	58.64	L31H N
ATOM	3269	CA	ASP	62	18.872	12.098	38.205	1.00	59.95	L31H C
ATOM	3270	CB	ASP	62	19.073	10.657	38.707	1.00	62.80	L31H C
ATOM	3271	CG	ASP	62	19.202	10.556	40.234	1.00	67.16	L31H C
ATOM	3272	OD1	ASP	62	19.770	9.540	40.700	1.00	67.81	L31H O
ATOM	3273	OD2	ASP	62	18.742	11.471	40.969	1.00	69.22	L31H O
ATOM	3274	C	ASP	62	17.587	12.686	38.758	1.00	58.55	L31H C
ATOM	3275	O	ASP	62	16.500	12.160	38.530	1.00	57.80	L31H O
ATOM	3276	N	ARG	63	17.721	13.787	39.487	1.00	57.77	L31H N
ATOM	3277	CA	ARG	63	16.561	14.546	39.933	1.00	57.68	L31H C
ATOM	3278	CB	ARG	63	17.006	15.733	40.781	1.00	59.02	L31H C
ATOM	3279	CG	ARG	63	17.583	15.367	42.130	1.00	60.91	L31H C
ATOM	3280	CD	ARG	63	17.748	16.618	42.979	1.00	64.55	L31H C
ATOM	3281	NE	ARG	63	18.504	17.660	42.280	1.00	67.17	L31H N
ATOM	3282	CZ	ARG	63	18.006	18.840	41.915	1.00	67.43	L31H C
ATOM	3283	NH1	ARG	63	16.741	19.145	42.178	1.00	67.62	L31H N
ATOM	3284	NH2	ARG	63	18.779	19.719	41.297	1.00	67.50	L31H N
ATOM	3285	C	ARG	63	15.761	15.054	38.734	1.00	56.49	L31H C
ATOM	3286	O	ARG	63	14.541	15.224	38.817	1.00	56.13	L31H O
ATOM	3287	N	PHE	64	16.471	15.297	37.632	1.00	55.21	L31H N
ATOM	3288	CA	PHE	64	15.873	15.705	36.360	1.00	54.46	L31H C
ATOM	3289	CB	PHE	64	16.782	16.699	35.623	1.00	53.69	L31H C
ATOM	3290	CG	PHE	64	17.058	17.949	36.385	1.00	51.65	L31H C
ATOM	3291	CD1	PHE	64	16.251	19.067	36.220	1.00	50.28	L31H C
ATOM	3292	CD2	PHE	64	18.131	18.010	37.269	1.00	50.64	L31H C
ATOM	3293	CE1	PHE	64	16.507	20.226	36.920	1.00	48.84	L31H C
ATOM	3294	CE2	PHE	64	18.394	19.165	37.974	1.00	48.98	L31H C
ATOM	3295	CZ	PHE	64	17.577	20.280	37.798	1.00	48.52	L31H C
ATOM	3296	C	PHE	64	15.690	14.490	35.459	1.00	53.96	L31H C
ATOM	3297	O	PHE	64	16.627	13.713	35.262	1.00	53.07	L31H O
ATOM	3298	N	SER	65	14.495	14.344	34.896	1.00	54.00	L31H N
ATOM	3299	CA	SER	65	14.223	13.248	33.970	1.00	54.18	L31H C
ATOM	3300	CB	SER	65	13.755	12.013	34.748	1.00	53.56	L31H C
ATOM	3301	OG	SER	65	12.887	12.390	35.802	1.00	52.90	L31H O
ATOM	3302	C	SER	65	13.182	13.653	32.927	1.00	54.21	L31H C
ATOM	3303	O	SER	65	12.299	14.463	33.202	1.00	54.41	L31H O
ATOM	3304	N	GLY	66	13.303	13.100	31.725	1.00	54.11	L31H N
ATOM	3305	CA	GLY	66	12.403	13.472	30.649	1.00	53.71	L31H C
ATOM	3306	C	GLY	66	11.674	12.267	30.103	1.00	54.08	L31H C
ATOM	3307	O	GLY	66	11.973	11.136	30.478	1.00	54.45	L31H O
ATOM	3308	N	SER	67	10.708	12.500	29.224	1.00	54.58	L31H N
ATOM	3309	CA	SER	67	9.993	11.398	28.591	1.00	55.72	L31H C
ATOM	3310	CB	SER	67	9.188	10.609	29.632	1.00	55.62	L31H C
ATOM	3311	OG	SER	67	8.017	11.305	30.019	1.00	57.25	L31H O
ATOM	3312	C	SER	67	9.067	11.916	27.496	1.00	56.30	L31H C
ATOM	3313	O	SER	67	8.618	13.060	27.535	1.00	55.91	L31H O
ATOM	3314	N	LYS	68	8.797	11.064	26.515	1.00	56.98	L31H N
ATOM	3315	CA	LYS	68	8.024	11.453	25.347	1.00	57.91	L31H C
ATOM	3316	CB	LYS	68	8.933	11.564	24.118	1.00	57.46	L31H C
ATOM	3317	CG	LYS	68	8.182	11.490	22.801	1.00	56.11	L31H C
ATOM	3318	CD	LYS	68	9.093	11.156	21.637	1.00	56.19	L31H C
ATOM	3319	CE	LYS	68	8.287	10.873	20.368	1.00	55.24	L31H C
ATOM	3320	NZ	LYS	68	9.135	10.836	19.137	1.00	51.72	L31H N
ATOM	3321	C	LYS	68	6.949	10.416	25.084	1.00	59.65	L31H C
ATOM	3322	O	LYS	68	7.141	9.224	25.340	1.00	60.17	L31H O
ATOM	3323	N	SER	69	5.817	10.874	24.564	1.00	61.33	L31H N
ATOM	3324	CA	SER	69	4.696	9.995	24.280	1.00	61.60	L31H C
ATOM	3325	CB	SER	69	3.870	9.787	25.550	1.00	60.95	L31H C
ATOM	3326	OG	SER	69	2.891	8.791	25.352	1.00	59.59	L31H O
ATOM	3327	C	SER	69	3.822	10.619	23.203	1.00	61.91	L31H C
ATOM	3328	O	SER	69	3.270	11.708	23.397	1.00	64.14	L31H O
ATOM	3329	N	GLY	70	3.694	9.934	22.071	1.00	60.05	L31H N
ATOM	3330	CA	GLY	70	2.820	10.421	21.018	1.00	56.96	L31H C
ATOM	3331	C	GLY	70	3.285	11.749	20.447	1.00	56.37	L31H C
ATOM	3332	O	GLY	70	4.269	11.810	19.709	1.00	56.19	L31H O
ATOM	3333	N	THR	71	2.587	12.825	20.786	1.00	55.57	L31H N
ATOM	3334	CA	THR	71	2.895	14.124	20.212	1.00	55.61	L31H C
ATOM	3335	CB	THR	71	1.685	14.708	19.503	1.00	54.53	L31H C
ATOM	3336	OG1	THR	71	0.597	14.758	20.428	1.00	56.64	L31H O
ATOM	3337	CG2	THR	71	1.289	13.850	18.316	1.00	54.65	L31H C
ATOM	3338	C	THR	71	3.328	15.098	21.289	1.00	56.84	L31H C
ATOM	3339	O	THR	71	3.385	16.308	21.061	1.00	57.59	L31H O
ATOM	3340	N	SER	72	3.628	14.572	22.470	1.00	57.58	L31H N
ATOM	3341	CA	SER	72	4.041	15.421	23.579	1.00	57.61	L31H C
ATOM	3342	CB	SER	72	2.875	15.631	24.542	1.00	57.91	L31H C

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ATOM   3343  OG  SER    72       2.211  14.410  24.795  1.00 58.50      L31H O
ATOM   3344  C   SER    72       5.221  14.830  24.323  1.00 57.22      L31H C
ATOM   3345  O   SER    72       5.757  13.796  23.937  1.00 57.93      L31H O
ATOM   3346  N   ALA    73       5.625  15.502  25.392  1.00 56.55      L31H N
ATOM   3347  CA  ALA    73       6.766  15.073  26.187  1.00 56.17      L31H C
ATOM   3348  CB  ALA    73       8.063  15.426  25.466  1.00 55.12      L31H C
ATOM   3349  C   ALA    73       6.681  15.802  27.514  1.00 56.46      L31H C
ATOM   3350  O   ALA    73       5.891  16.719  27.659  1.00 56.55      L31H O
ATOM   3351  N   SER    74       7.484  15.401  28.487  1.00 58.75      L31H N
ATOM   3352  CA  SER    74       7.588  16.178  29.716  1.00 60.34      L31H C
ATOM   3353  CB  SER    74       6.575  15.712  30.738  1.00 60.09      L31H C
ATOM   3354  OG  SER    74       6.962  16.205  32.010  1.00 58.83      L31H O
ATOM   3355  C   SER    74       8.953  16.163  30.389  1.00 60.92      L31H C
ATOM   3356  O   SER    74       9.735  15.224  30.228  1.00 63.33      L31H O
ATOM   3357  N   LEU    75       9.216  17.211  31.162  1.00 59.31      L31H N
ATOM   3358  CA  LEU    75      10.383  17.259  32.032  1.00 58.44      L31H C
ATOM   3359  CB  LEU    75      11.150  18.574  31.803  1.00 59.47      L31H C
ATOM   3360  CG  LEU    75      12.456  18.834  32.565  1.00 57.74      L31H C
ATOM   3361  CD1 LEU    75      13.397  17.653  32.379  1.00 58.12      L31H C
ATOM   3362  CD2 LEU    75      13.102  20.118  32.067  1.00 56.35      L31H C
ATOM   3363  C   LEU    75       9.924  17.163  33.492  1.00 58.84      L31H C
ATOM   3364  O   LEU    75       9.086  17.945  33.938  1.00 58.64      L31H O
ATOM   3365  N   ALA    76      10.470  16.201  34.226  1.00 59.13      L31H N
ATOM   3366  CA  ALA    76      10.194  16.059  35.650  1.00 60.32      L31H C
ATOM   3367  CB  ALA    76       9.776  14.632  35.951  1.00 59.16      L31H C
ATOM   3368  C   ALA    76      11.427  16.423  36.480  1.00 61.43      L31H C
ATOM   3369  O   ALA    76      12.535  15.935  36.220  1.00 62.96      L31H O
ATOM   3370  N   ILE    77      11.237  17.278  37.482  1.00 61.31      L31H N
ATOM   3371  CA  ILE    77      12.317  17.597  38.413  1.00 61.17      L31H C
ATOM   3372  CB  ILE    77      12.624  19.120  38.434  1.00 61.96      L31H C
ATOM   3373  CG2 ILE    77      13.872  19.387  39.253  1.00 61.34      L31H C
ATOM   3374  CG1 ILE    77      12.863  19.633  37.015  1.00 61.57      L31H C
ATOM   3375  CD1 ILE    77      13.330  21.061  36.956  1.00 60.74      L31H C
ATOM   3376  C   ILE    77      11.932  17.163  39.821  1.00 60.56      L31H C
ATOM   3377  O   ILE    77      10.914  17.592  40.341  1.00 60.68      L31H O
ATOM   3378  N   THR    78      12.733  16.315  40.447  1.00 60.81      L31H N
ATOM   3379  CA  THR    78      12.422  15.930  41.815  1.00 63.27      L31H C
ATOM   3380  CB  THR    78      12.493  14.402  41.993  1.00 62.92      L31H C
ATOM   3381  OG1 THR    78      13.677  13.902  41.366  1.00 65.95      L31H O
ATOM   3382  CG2 THR    78      11.287  13.739  41.375  1.00 62.85      L31H C
ATOM   3383  C   THR    78      13.315  16.603  42.861  1.00 64.30      L31H C
ATOM   3384  O   THR    78      14.312  17.251  42.523  1.00 63.28      L31H O
ATOM   3385  N   GLY    79      12.929  16.460  44.128  1.00 64.43      L31H N
ATOM   3386  CA  GLY    79      13.737  16.961  45.222  1.00 64.73      L31H C
ATOM   3387  C   GLY    79      14.187  18.371  44.944  1.00 65.69      L31H C
ATOM   3388  O   GLY    79      15.382  18.678  44.980  1.00 66.58      L31H O
ATOM   3389  N   LEU    80      13.219  19.233  44.662  1.00 66.28      L31H N
ATOM   3390  CA  LEU    80      13.501  20.552  44.116  1.00 67.14      L31H C
ATOM   3391  CB  LEU    80      12.182  21.315  43.940  1.00 66.33      L31H C
ATOM   3392  CG  LEU    80      12.006  22.208  42.707  1.00 65.90      L31H C
ATOM   3393  CD1 LEU    80      12.826  21.693  41.522  1.00 64.85      L31H C
ATOM   3394  CD2 LEU    80      10.531  22.256  42.364  1.00 63.32      L31H C
ATOM   3395  C   LEU    80      14.473  21.333  45.008  1.00 67.62      L31H C
ATOM   3396  O   LEU    80      14.247  21.501  46.203  1.00 66.07      L31H O
ATOM   3397  N   GLN    81      15.571  21.782  44.412  1.00 69.02      L31H N
ATOM   3398  CA  GLN    81      16.511  22.664  45.090  1.00 71.32      L31H C
ATOM   3399  CB  GLN    81      17.956  22.251  44.784  1.00 71.81      L31H C
ATOM   3400  CG  GLN    81      18.387  20.908  45.359  1.00 72.58      L31H C
ATOM   3401  CD  GLN    81      19.656  20.370  44.703  1.00 73.31      L31H C
ATOM   3402  OE1 GLN    81      20.123  20.900  43.695  1.00 73.31      L31H O
ATOM   3403  NE2 GLN    81      20.212  19.309  45.274  1.00 75.44      L31H N
ATOM   3404  C   GLN    81      16.262  24.082  44.586  1.00 71.73      L31H C
ATOM   3405  O   GLN    81      15.703  24.269  43.508  1.00 71.27      L31H O
ATOM   3406  N   ALA    82      16.675  25.076  45.365  1.00 73.50      L31H N
ATOM   3407  CA  ALA    82      16.338  26.464  45.064  1.00 75.37      L31H C
ATOM   3408  CB  ALA    82      16.599  27.340  46.277  1.00 76.64      L31H C
ATOM   3409  C   ALA    82      17.146  26.961  43.882  1.00 76.22      L31H C
ATOM   3410  O   ALA    82      16.703  27.823  43.123  1.00 76.26      L31H O
ATOM   3411  N   GLU    83      18.336  26.399  43.732  1.00 76.93      L31H N
ATOM   3412  CA  GLU    83      19.222  26.755  42.645  1.00 77.92      L31H C
ATOM   3413  CB  GLU    83      20.657  26.390  43.025  1.00 82.68      L31H C
ATOM   3414  CG  GLU    83      21.235  27.232  44.165  1.00 90.24      L31H C
ATOM   3415  CD  GLU    83      20.590  26.959  45.522  1.00 94.97      L31H C
ATOM   3416  OE1 GLU    83      20.480  25.777  45.917  1.00 99.12      L31H O
ATOM   3417  OE2 GLU    83      20.199  27.934  46.199  1.00 98.16      L31H O
ATOM   3418  C   GLU    83      18.802  26.050  41.356  1.00 75.65      L31H C
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ATOM   3419  O   GLU    83      19.563  25.980  40.395  1.00 74.80      L31H O
ATOM   3420  N   ASP    84      17.579  25.527  41.351  1.00 73.41      L31H N
ATOM   3421  CA  ASP    84      16.981  24.964  40.145  1.00 71.11      L31H C
ATOM   3422  CB  ASP    84      16.245  23.661  40.471  1.00 70.69      L31H C
ATOM   3423  CG  ASP    84      17.181  22.466  40.499  1.00 70.12      L31H C
ATOM   3424  OD1 ASP    84      18.176  22.487  39.741  1.00 70.45      L31H O
ATOM   3425  OD2 ASP    84      16.935  21.514  41.271  1.00 67.92      L31H O
ATOM   3426  C   ASP    84      16.032  25.949  39.495  1.00 69.37      L31H C
ATOM   3427  O   ASP    84      15.559  25.735  38.385  1.00 69.35      L31H O
ATOM   3428  N   GLU    85      15.765  27.040  40.197  1.00 67.68      L31H N
ATOM   3429  CA  GLU    85      14.955  28.115  39.653  1.00 65.89      L31H C
ATOM   3430  CB  GLU    85      14.859  29.253  40.680  1.00 67.36      L31H C
ATOM   3431  CG  GLU    85      14.009  30.448  40.250  1.00 69.50      L31H C
ATOM   3432  CD  GLU    85      13.407  31.190  41.433  1.00 71.65      L31H C
ATOM   3433  OE1 GLU    85      13.686  32.402  41.596  1.00 73.05      L31H O
ATOM   3434  OE2 GLU    85      12.650  30.554  42.200  1.00 73.05      L31H O
ATOM   3435  C   GLU    85      15.585  28.613  38.346  1.00 63.80      L31H C
ATOM   3436  O   GLU    85      16.765  28.993  38.316  1.00 62.73      L31H O
ATOM   3437  N   ALA    86      14.795  28.601  37.270  1.00 61.53      L31H N
ATOM   3438  CA  ALA    86      15.285  28.998  35.949  1.00 58.22      L31H C
ATOM   3439  CB  ALA    86      16.519  28.179  35.595  1.00 59.72      L31H C
ATOM   3440  C   ALA    86      14.251  28.888  34.819  1.00 56.10      L31H C
ATOM   3441  O   ALA    86      13.093  28.519  35.037  1.00 55.00      L31H O
ATOM   3442  N   ASP    87      14.691  29.225  33.608  1.00 53.32      L31H N
ATOM   3443  CA  ASP    87      13.868  29.104  32.415  1.00 51.34      L31H C
ATOM   3444  CB  ASP    87      14.125  30.272  31.475  1.00 51.11      L31H C
ATOM   3445  CG  ASP    87      13.594  31.583  32.020  1.00 53.30      L31H C
ATOM   3446  OD1 ASP    87      12.788  31.549  32.972  1.00 53.43      L31H O
ATOM   3447  OD2 ASP    87      13.983  32.649  31.491  1.00 55.18      L31H O
ATOM   3448  C   ASP    87      14.154  27.801  31.675  1.00 51.29      L31H C
ATOM   3449  O   ASP    87      15.285  27.556  31.221  1.00 50.39      L31H O
ATOM   3450  N   TYR    88      13.113  26.977  31.544  1.00 49.52      L31H N
ATOM   3451  CA  TYR    88      13.207  25.706  30.848  1.00 49.11      L31H C
ATOM   3452  CB  TYR    88      12.560  24.624  31.706  1.00 48.57      L31H C
ATOM   3453  CG  TYR    88      13.368  24.390  32.957  1.00 47.75      L31H C
ATOM   3454  CD1 TYR    88      12.958  24.884  34.188  1.00 47.35      L31H C
ATOM   3455  CE1 TYR    88      13.767  24.761  35.309  1.00 46.21      L31H C
ATOM   3456  CD2 TYR    88      14.599  23.760  32.884  1.00 47.54      L31H C
ATOM   3457  CE2 TYR    88      15.411  23.633  33.986  1.00 46.69      L31H C
ATOM   3458  CZ  TYR    88      15.000  24.136  35.197  1.00 46.67      L31H C
ATOM   3459  OH  TYR    88      15.849  24.031  36.274  1.00 43.55      L31H O
ATOM   3460  C   TYR    88      12.585  25.768  29.457  1.00 49.99      L31H C
ATOM   3461  O   TYR    88      11.539  26.388  29.257  1.00 50.31      L31H O
ATOM   3462  N   TYR    89      13.262  25.157  28.490  1.00 49.96      L31H N
ATOM   3463  CA  TYR    89      12.795  25.166  27.115  1.00 51.75      L31H C
ATOM   3464  CB  TYR    89      13.607  26.157  26.259  1.00 53.70      L31H C
ATOM   3465  CG  TYR    89      13.533  27.636  26.644  1.00 56.56      L31H C
ATOM   3466  CD1 TYR    89      14.474  28.196  27.509  1.00 57.34      L31H C
ATOM   3467  CE1 TYR    89      14.466  29.550  27.814  1.00 58.06      L31H C
ATOM   3468  CD2 TYR    89      12.567  28.482  26.095  1.00 56.23      L31H C
ATOM   3469  CE2 TYR    89      12.548  29.843  26.396  1.00 57.93      L31H C
ATOM   3470  CZ  TYR    89      13.507  30.371  27.257  1.00 58.84      L31H C
ATOM   3471  OH  TYR    89      13.533  31.723  27.547  1.00 59.54      L31H O
ATOM   3472  C   TYR    89      12.955  23.760  26.541  1.00 52.19      L31H C
ATOM   3473  O   TYR    89      13.932  23.063  26.830  1.00 51.07      L31H O
ATOM   3474  N   CYS    90      11.988  23.356  25.722  1.00 51.93      L31H N
ATOM   3475  CA  CYS    90      12.106  22.135  24.939  1.00 51.12      L31H C
ATOM   3476  C   CYS    90      12.345  22.414  23.460  1.00 50.42      L31H C
ATOM   3477  O   CYS    90      12.111  23.526  22.983  1.00 50.17      L31H O
ATOM   3478  CB  CYS    90      10.848  21.292  25.097  1.00 53.40      L31H C
ATOM   3479  SG  CYS    90       9.280  22.130  24.728  1.00 51.64      L31H S
ATOM   3480  N   GLN    91      12.802  21.395  22.733  1.00 49.04      L31H N
ATOM   3481  CA  GLN    91      13.132  21.550  21.320  1.00 46.80      L31H C
ATOM   3482  CB  GLN    91      14.568  22.037  21.204  1.00 46.39      L31H C
ATOM   3483  CG  GLN    91      15.174  21.980  19.822  1.00 43.37      L31H C
ATOM   3484  CD  GLN    91      16.675  21.962  19.925  1.00 43.12      L31H C
ATOM   3485  OE1 GLN    91      17.231  21.108  20.604  1.00 42.92      L31H O
ATOM   3486  NE2 GLN    91      17.343  22.909  19.273  1.00 41.91      L31H N
ATOM   3487  C   GLN    91      12.964  20.257  20.531  1.00 46.33      L31H C
ATOM   3488  O   GLN    91      13.317  19.183  21.015  1.00 45.84      L31H O
ATOM   3489  N   SER    92      12.433  20.371  19.313  1.00 45.77      L31H N
ATOM   3490  CA  SER    92      12.363  19.246  18.381  1.00 45.24      L31H C
ATOM   3491  CB  SER    92      10.977  18.603  18.438  1.00 45.03      L31H C
ATOM   3492  OG  SER    92      10.870  17.510  17.537  1.00 47.80      L31H O
ATOM   3493  C   SER    92      12.679  19.673  16.937  1.00 45.02      L31H C
ATOM   3494  O   SER    92      12.694  20.860  16.622  1.00 44.46      L31H O
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ATOM   3495  N   TYR    93      12.948  18.695  16.073  1.00 44.70      L31H N
ATOM   3496  CA  TYR    93      13.093  18.933  14.640  1.00 43.04      L31H C
ATOM   3497  CB  TYR    93      13.960  17.835  13.993  1.00 40.79      L31H C
ATOM   3498  CG  TYR    93      14.200  18.002  12.493  1.00 38.37      L31H C
ATOM   3499  CD1 TYR    93      15.219  18.832  12.014  1.00 36.91      L31H C
ATOM   3500  CE1 TYR    93      15.435  19.013  10.642  1.00 32.83      L31H C
ATOM   3501  CD2 TYR    93      13.400  17.349  11.558  1.00 35.95      L31H C
ATOM   3502  CE2 TYR    93      13.609  17.521  10.180  1.00 35.00      L31H C
ATOM   3503  CZ  TYR    93      14.631  18.360   9.732  1.00 34.67      L31H C
ATOM   3504  OH  TYR    93      14.833  18.558   8.381  1.00 32.18      L31H O
ATOM   3505  C   TYR    93      11.692  18.892  14.055  1.00 43.84      L31H C
ATOM   3506  O   TYR    93      10.820  18.220  14.592  1.00 42.51      L31H O
ATOM   3507  N   ASP    94      11.482  19.615  12.964  1.00 45.57      L31H N
ATOM   3508  CA  ASP    94      10.186  19.654  12.308  1.00 47.61      L31H C
ATOM   3509  CB  ASP    94       9.550  21.027  12.531  1.00 49.33      L31H C
ATOM   3510  CG  ASP    94       8.067  21.041  12.222  1.00 51.78      L31H C
ATOM   3511  OD1 ASP    94       7.277  21.314  13.156  1.00 52.86      L31H O
ATOM   3512  OD2 ASP    94       7.693  20.783  11.056  1.00 51.71      L31H O
ATOM   3513  C   ASP    94      10.399  19.402  10.818  1.00 48.27      L31H C
ATOM   3514  O   ASP    94      11.058  20.187  10.141  1.00 48.27      L31H O
ATOM   3515  N   SER    95       9.848  18.312  10.299  1.00 49.99      L31H N
ATOM   3516  CA  SER    95      10.228  17.877   8.964  1.00 52.79      L31H C
ATOM   3517  CB  SER    95       9.762  16.446   8.702  1.00 52.89      L31H C
ATOM   3518  OG  SER    95       8.526  16.436   8.005  1.00 54.06      L31H O
ATOM   3519  C   SER    95       9.663  18.797   7.890  1.00 55.32      L31H C
ATOM   3520  O   SER    95      10.082  18.735   6.734  1.00 56.36      L31H O
ATOM   3521  N   SER    96       8.712  19.649   8.261  1.00 57.01      L31H N
ATOM   3522  CA  SER    96       8.219  20.657   7.330  1.00 59.06      L31H C
ATOM   3523  CB  SER    96       6.765  20.981   7.624  1.00 57.61      L31H C
ATOM   3524  OG  SER    96       6.662  21.651   8.865  1.00 56.06      L31H O
ATOM   3525  C   SER    96       9.048  21.943   7.412  1.00 61.43      L31H C
ATOM   3526  O   SER    96       9.380  22.542   6.391  1.00 63.10      L31H O
ATOM   3527  N   LEU    97       9.380  22.369   8.625  1.00 62.38      L31H N
ATOM   3528  CA  LEU    97      10.125  23.608   8.802  1.00 63.01      L31H C
ATOM   3529  CB  LEU    97       9.970  24.118  10.238  1.00 66.93      L31H C
ATOM   3530  CG  LEU    97       8.521  24.274  10.714  1.00 69.67      L31H C
ATOM   3531  CD1 LEU    97       8.477  25.078  12.010  1.00 69.75      L31H C
ATOM   3532  CD2 LEU    97       7.709  24.963   9.636  1.00 69.77      L31H C
ATOM   3533  C   LEU    97      11.606  23.422   8.477  1.00 61.49      L31H C
ATOM   3534  O   LEU    97      12.307  24.384   8.146  1.00 59.90      L31H O
ATOM   3535  N   SER    98      12.073  22.181   8.577  1.00 58.39      L31H N
ATOM   3536  CA  SER    98      13.452  21.858   8.262  1.00 55.51      L31H C
ATOM   3537  CB  SER    98      13.793  22.338   6.856  1.00 56.09      L31H C
ATOM   3538  OG  SER    98      13.189  21.493   5.898  1.00 59.25      L31H O
ATOM   3539  C   SER    98      14.422  22.457   9.264  1.00 53.09      L31H C
ATOM   3540  O   SER    98      15.576  22.727   8.945  1.00 51.29      L31H O
ATOM   3541  N   GLY    99      13.950  22.663  10.484  1.00 51.30      L31H N
ATOM   3542  CA  GLY    99      14.827  23.149  11.532  1.00 50.67      L31H C
ATOM   3543  C   GLY    99      14.406  22.584  12.868  1.00 50.25      L31H C
ATOM   3544  O   GLY    99      13.335  21.998  12.991  1.00 49.46      L31H O
ATOM   3545  N   SER   100      15.245  22.754  13.877  1.00 50.20      L31H N
ATOM   3546  CA  SER   100      14.920  22.233  15.193  1.00 50.66      L31H C
ATOM   3547  CB  SER   100      16.177  21.667  15.858  1.00 51.28      L31H C
ATOM   3548  OG  SER   100      16.337  20.294  15.521  1.00 52.02      L31H O
ATOM   3549  C   SER   100      14.294  23.321  16.055  1.00 50.29      L31H C
ATOM   3550  O   SER   100      14.995  24.184  16.582  1.00 50.01      L31H O
ATOM   3551  N   VAL   101      12.970  23.266  16.190  1.00 48.60      L31H N
ATOM   3552  CA  VAL   101      12.189  24.384  16.701  1.00 47.52      L31H C
ATOM   3553  CB  VAL   101      10.881  24.535  15.918  1.00 46.73      L31H C
ATOM   3554  CG1 VAL   101      11.192  24.568  14.442  1.00 47.59      L31H C
ATOM   3555  CG2 VAL   101       9.920  23.403  16.256  1.00 45.46      L31H C
ATOM   3556  C   VAL   101      11.853  24.264  18.184  1.00 47.82      L31H C
ATOM   3557  O   VAL   101      11.604  23.167  18.691  1.00 48.23      L31H O
ATOM   3558  N   PHE   102      11.841  25.399  18.876  1.00 46.37      L31H N
ATOM   3559  CA  PHE   102      11.718  25.388  20.318  1.00 47.35      L31H C
ATOM   3560  CB  PHE   102      12.631  26.421  20.932  1.00 44.20      L31H C
ATOM   3561  CG  PHE   102      14.061  26.242  20.590  1.00 41.82      L31H C
ATOM   3562  CD1 PHE   102      14.551  26.688  19.380  1.00 39.65      L31H C
ATOM   3563  CD2 PHE   102      14.944  25.730  21.522  1.00 40.97      L31H C
ATOM   3564  CE1 PHE   102      15.893  26.641  19.113  1.00 38.50      L31H C
ATOM   3565  CE2 PHE   102      16.292  25.680  21.260  1.00 38.80      L31H C
ATOM   3566  CZ  PHE   102      16.769  26.139  20.057  1.00 39.41      L31H C
ATOM   3567  C   PHE   102      10.315  25.646  20.828  1.00 50.48      L31H C
ATOM   3568  O   PHE   102       9.402  25.958  20.067  1.00 52.07      L31H O
ATOM   3569  N   GLY   103      10.166  25.515  22.140  1.00 53.14      L31H N
ATOM   3570  CA  GLY   103       8.894  25.767  22.779  1.00 55.97      L31H C
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ATOM   3571  C   GLY   103       8.882  27.133  23.425  1.00 57.19      L31H C
ATOM   3572  O   GLY   103       9.941  27.744  23.611  1.00 56.34      L31H O
ATOM   3573  N   GLY   104       7.679  27.606  23.761  1.00 58.19      L31H N
ATOM   3574  CA  GLY   104       7.525  28.924  24.349  1.00 58.63      L31H C
ATOM   3575  C   GLY   104       8.458  29.139  25.523  1.00 59.14      L31H C
ATOM   3576  O   GLY   104       9.114  30.177  25.626  1.00 59.20      L31H O
ATOM   3577  N   GLY   105       8.532  28.151  26.406  1.00 60.02      L31H N
ATOM   3578  CA  GLY   105       9.420  28.257  27.547  1.00 61.89      L31H C
ATOM   3579  C   GLY   105       8.647  28.213  28.850  1.00 63.99      L31H C
ATOM   3580  O   GLY   105       7.412  28.344  28.866  1.00 65.05      L31H O
ATOM   3581  N   THR   106       9.369  28.016  29.951  1.00 63.25      L31H N
ATOM   3582  CA  THR   106       8.743  28.026  31.264  1.00 61.53      L31H C
ATOM   3583  CB  THR   106       8.311  26.620  31.690  1.00 60.33      L31H C
ATOM   3584  OG1 THR   106       7.374  26.095  30.740  1.00 60.09      L31H O
ATOM   3585  CG2 THR   106       7.661  26.667  33.058  1.00 58.71      L31H C
ATOM   3586  C   THR   106       9.652  28.608  32.342  1.00 62.44      L31H C
ATOM   3587  O   THR   106      10.829  28.256  32.458  1.00 61.28      L31H O
ATOM   3588  N   LYS   107       9.087  29.522  33.122  1.00 63.21      L31H N
ATOM   3589  CA  LYS   107       9.755  30.039  34.299  1.00 62.64      L31H C
ATOM   3590  CB  LYS   107       9.161  31.391  34.689  1.00 64.98      L31H C
ATOM   3591  CG  LYS   107       9.643  31.922  36.030  1.00 67.60      L31H C
ATOM   3592  CD  LYS   107      10.962  32.670  35.901  1.00 72.42      L31H C
ATOM   3593  CE  LYS   107      11.213  33.560  37.126  1.00 76.31      L31H C
ATOM   3594  NZ  LYS   107      12.373  34.501  36.969  1.00 79.44      L31H N
ATOM   3595  C   LYS   107       9.543  29.042  35.426  1.00 61.19      L31H C
ATOM   3596  O   LYS   107       8.401  28.794  35.846  1.00 62.04      L31H O
ATOM   3597  N   LEU   108      10.638  28.457  35.904  1.00 57.46      L31H N
ATOM   3598  CA  LEU   108      10.570  27.633  37.102  1.00 53.84      L31H C
ATOM   3599  CB  LEU   108      11.556  26.466  37.040  1.00 54.15      L31H C
ATOM   3600  CG  LEU   108      11.541  25.642  38.328  1.00 50.02      L31H C
ATOM   3601  CD1 LEU   108      10.186  25.017  38.503  1.00 50.06      L31H C
ATOM   3602  CD2 LEU   108      12.597  24.589  38.290  1.00 51.57      L31H C
ATOM   3603  C   LEU   108      10.902  28.478  38.309  1.00 53.02      L31H C
ATOM   3604  O   LEU   108      12.016  28.981  38.440  1.00 51.31      L31H O
ATOM   3605  N   THR   109       9.925  28.629  39.192  1.00 52.73      L31H N
ATOM   3606  CA  THR   109      10.118  29.355  40.440  1.00 52.49      L31H C
ATOM   3607  CB  THR   109       9.000  30.416  40.628  1.00 52.18      L31H C
ATOM   3608  OG1 THR   109       9.260  31.542  39.777  1.00 50.86      L31H O
ATOM   3609  CG2 THR   109       8.918  30.866  42.076  1.00 53.04      L31H C
ATOM   3610  C   THR   109      10.113  28.375  41.617  1.00 53.48      L31H C
ATOM   3611  O   THR   109       9.120  27.680  41.851  1.00 51.71      L31H O
ATOM   3612  N   VAL   110      11.228  28.304  42.342  1.00 54.50      L31H N
ATOM   3613  CA  VAL   110      11.286  27.475  43.546  1.00 56.59      L31H C
ATOM   3614  CB  VAL   110      12.727  26.972  43.863  1.00 55.19      L31H C
ATOM   3615  CG1 VAL   110      12.700  26.076  45.091  1.00 51.04      L31H C
ATOM   3616  CG2 VAL   110      13.302  26.227  42.673  1.00 54.74      L31H C
ATOM   3617  C   VAL   110      10.824  28.353  44.690  1.00 59.73      L31H C
ATOM   3618  O   VAL   110      11.501  29.312  45.047  1.00 59.28      L31H O
ATOM   3619  N   LEU   111       9.670  28.027  45.260  1.00 63.84      L31H N
ATOM   3620  CA  LEU   111       8.976  28.955  46.141  1.00 69.11      L31H C
ATOM   3621  CB  LEU   111       7.519  28.520  46.288  1.00 64.19      L31H C
ATOM   3622  CG  LEU   111       6.819  28.414  44.932  1.00 60.56      L31H C
ATOM   3623  CD1 LEU   111       5.553  27.609  45.066  1.00 58.84      L31H C
ATOM   3624  CD2 LEU   111       6.546  29.800  44.386  1.00 55.98      L31H C
ATOM   3625  C   LEU   111       9.645  29.066  47.503  1.00 75.53      L31H C
ATOM   3626  O   LEU   111       9.702  28.101  48.259  1.00 78.23      L31H O
ATOM   3627  N   GLY   112      10.159  30.254  47.801  1.00 81.81      L31H N
ATOM   3628  CA  GLY   112      10.745  30.510  49.103  1.00 90.35      L31H C
ATOM   3629  C   GLY   112      10.012  31.619  49.837  1.00 95.92      L31H C
ATOM   3630  O   GLY   112      10.472  32.096  50.874  1.00 95.75      L31H O
ATOM   3631  N   GLN   113       8.870  32.029  49.287  1.00102.79      L31H N
ATOM   3632  CA  GLN   113       8.019  33.058  49.885  1.00110.31      L31H C
ATOM   3633  CB  GLN   113       8.334  34.429  49.280  1.00113.77      L31H C
ATOM   3634  CG  GLN   113       9.794  34.826  49.315  1.00118.20      L31H C
ATOM   3635  CD  GLN   113      10.067  36.072  48.494  1.00120.53      L31H C
ATOM   3636  OE1 GLN   113       9.723  37.186  48.896  1.00121.11      L31H O
ATOM   3637  NE2 GLN   113      10.687  35.890  47.332  1.00121.57      L31H N
ATOM   3638  C   GLN   113       6.545  32.727  49.625  1.00113.82      L31H C
ATOM   3639  O   GLN   113       6.214  32.017  48.679  1.00113.64      L31H O
ATOM   3640  N   PRO   114       5.640  33.248  50.462  1.00117.28      L31H N
ATOM   3641  CD  PRO   114       5.936  34.027  51.673  1.00117.03      L31H C
ATOM   3642  CA  PRO   114       4.210  32.935  50.357  1.00119.60      L31H C
ATOM   3643  CB  PRO   114       3.609  33.570  51.609  1.00119.09      L31H C
ATOM   3644  CG  PRO   114       4.761  33.732  52.542  1.00118.20      L31H C
ATOM   3645  C   PRO   114       3.566  33.484  49.094  1.00121.80      L31H C
ATOM   3646  O   PRO   114       4.237  34.052  48.239  1.00122.55      L31H O
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ATOM	3647	N	LYS	115	2.254	33.304	48.988	1.00	123.51	L31H N
ATOM	3648	CA	LYS	115	1.465	33.997	47.980	1.00	124.74	L31H C
ATOM	3649	CB	LYS	115	-0.025	33.715	48.192	1.00	125.92	L31H C
ATOM	3650	CG	LYS	115	-0.961	34.837	47.740	1.00	125.60	L31H C
ATOM	3651	CD	LYS	115	-1.039	34.958	46.224	1.00	124.69	L31H C
ATOM	3652	CE	LYS	115	-1.896	33.860	45.617	1.00	124.00	L31H C
ATOM	3653	NZ	LYS	115	-3.289	33.894	46.139	1.00	123.01	L31H N
ATOM	3654	C	LYS	115	1.722	35.492	48.094	1.00	125.34	L31H C
ATOM	3655	O	LYS	115	2.067	35.988	49.166	1.00	126.21	L31H O
ATOM	3656	N	ALA	116	1.559	36.206	46.986	1.00	125.78	L31H N
ATOM	3657	CA	ALA	116	1.657	37.657	46.994	1.00	125.51	L31H C
ATOM	3658	CB	ALA	116	3.117	38.080	46.981	1.00	124.48	L31H C
ATOM	3659	C	ALA	116	0.933	38.250	45.794	1.00	125.03	L31H C
ATOM	3660	O	ALA	116	1.418	38.161	44.667	1.00	125.35	L31H O
ATOM	3661	N	ALA	117	-0.229	38.848	46.043	1.00	123.76	L31H N
ATOM	3662	CA	ALA	117	-0.939	39.596	45.011	1.00	120.64	L31H C
ATOM	3663	CB	ALA	117	-2.425	39.662	45.336	1.00	124.29	L31H C
ATOM	3664	C	ALA	117	-0.352	41.001	44.940	1.00	117.39	L31H C
ATOM	3665	O	ALA	117	-0.156	41.654	45.964	1.00	117.55	L31H O
ATOM	3666	N	PRO	118	-0.051	41.480	43.724	1.00	113.58	L31H N
ATOM	3667	CD	PRO	118	-0.303	40.835	42.425	1.00	113.39	L31H C
ATOM	3668	CA	PRO	118	0.628	42.768	43.574	1.00	109.03	L31H C
ATOM	3669	CB	PRO	118	1.009	42.804	42.096	1.00	110.84	L31H C
ATOM	3670	CG	PRO	118	0.030	41.917	41.436	1.00	112.56	L31H C
ATOM	3671	C	PRO	118	-0.236	43.959	43.974	1.00	104.68	L31H C
ATOM	3672	O	PRO	118	-1.468	43.915	43.878	1.00	103.62	L31H O
ATOM	3673	N	SER	119	0.429	45.015	44.434	1.00	98.81	L31H N
ATOM	3674	CA	SER	119	-0.215	46.302	44.650	1.00	92.70	L31H C
ATOM	3675	CB	SER	119	0.456	47.045	45.805	1.00	93.69	L31H C
ATOM	3676	OG	SER	119	1.866	47.017	45.677	1.00	95.23	L31H O
ATOM	3677	C	SER	119	-0.112	47.119	43.373	1.00	87.43	L31H C
ATOM	3678	O	SER	119	0.908	47.093	42.684	1.00	85.84	L31H O
ATOM	3679	N	VAL	120	-1.180	47.835	43.053	1.00	82.08	L31H N
ATOM	3680	CA	VAL	120	-1.258	48.520	41.780	1.00	78.07	L31H C
ATOM	3681	CB	VAL	120	-2.216	47.795	40.833	1.00	78.62	L31H C
ATOM	3682	CG1	VAL	120	-2.413	48.604	39.569	1.00	79.64	L31H C
ATOM	3683	CG2	VAL	120	-1.661	46.424	40.502	1.00	79.29	L31H C
ATOM	3684	C	VAL	120	-1.725	49.949	41.944	1.00	75.01	L31H C
ATOM	3685	O	VAL	120	-2.768	50.201	42.530	1.00	73.87	L31H O
ATOM	3686	N	THR	121	-0.943	50.888	41.432	1.00	72.79	L31H N
ATOM	3687	CA	THR	121	-1.383	52.276	41.371	1.00	71.71	L31H C
ATOM	3688	CB	THR	121	-0.371	53.227	42.045	1.00	69.80	L31H C
ATOM	3689	OG1	THR	121	-0.160	52.821	43.403	1.00	67.98	L31H O
ATOM	3690	CG2	THR	121	-0.900	54.647	42.039	1.00	69.16	L31H C
ATOM	3691	C	THR	121	-1.543	52.676	39.909	1.00	71.78	L31H C
ATOM	3692	O	THR	121	-0.764	52.242	39.054	1.00	72.43	L31H O
ATOM	3693	N	LEU	122	-2.558	53.487	39.621	1.00	70.64	L31H N
ATOM	3694	CA	LEU	122	-2.806	53.917	38.252	1.00	70.47	L31H C
ATOM	3695	CB	LEU	122	-4.121	53.331	37.737	1.00	69.96	L31H C
ATOM	3696	CG	LEU	122	-4.416	53.622	36.263	1.00	69.35	L31H C
ATOM	3697	CD1	LEU	122	-3.214	53.213	35.412	1.00	68.20	L31H C
ATOM	3698	CD2	LEU	122	-5.663	52.865	35.823	1.00	69.21	L31H C
ATOM	3699	C	LEU	122	-2.848	55.432	38.124	1.00	70.57	L31H C
ATOM	3700	O	LEU	122	-3.630	56.098	38.805	1.00	71.23	L31H O
ATOM	3701	N	PHE	123	-2.008	55.967	37.239	1.00	69.59	L31H N
ATOM	3702	CA	PHE	123	-1.916	57.410	37.026	1.00	67.96	L31H C
ATOM	3703	CB	PHE	123	-0.460	57.865	37.114	1.00	68.86	L31H C
ATOM	3704	CG	PHE	123	0.025	58.076	38.516	1.00	70.50	L31H C
ATOM	3705	CD1	PHE	123	0.808	57.124	39.144	1.00	71.72	L31H C
ATOM	3706	CD2	PHE	123	-0.301	59.230	39.206	1.00	71.39	L31H C
ATOM	3707	CE1	PHE	123	1.256	57.318	40.431	1.00	72.59	L31H C
ATOM	3708	CE2	PHE	123	0.145	59.432	40.495	1.00	71.92	L31H C
ATOM	3709	CZ	PHE	123	0.924	58.475	41.107	1.00	73.15	L31H C
ATOM	3710	C	PHE	123	-2.499	57.859	35.690	1.00	66.49	L31H C
ATOM	3711	O	PHE	123	-2.185	57.293	34.636	1.00	66.68	L31H O
ATOM	3712	N	PRO	124	-3.360	58.890	35.728	1.00	64.71	L31H N
ATOM	3713	CD	PRO	124	-3.896	59.403	36.999	1.00	64.64	L31H C
ATOM	3714	CA	PRO	124	-3.870	59.650	34.579	1.00	62.32	L31H C
ATOM	3715	CB	PRO	124	-4.992	60.483	35.175	1.00	64.01	L31H C
ATOM	3716	CG	PRO	124	-4.579	60.680	36.592	1.00	64.63	L31H C
ATOM	3717	C	PRO	124	-2.792	60.544	33.954	1.00	62.33	L31H C
ATOM	3718	O	PRO	124	-1.774	60.847	34.587	1.00	61.20	L31H O
ATOM	3719	N	PRO	125	-3.002	60.978	32.700	1.00	62.33	L31H N
ATOM	3720	CD	PRO	125	-3.860	60.367	31.677	1.00	62.42	L31H C
ATOM	3721	CA	PRO	125	-2.120	61.991	32.117	1.00	60.75	L31H C
ATOM	3722	CB	PRO	125	-2.604	62.094	30.672	1.00	61.44	L31H C

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ATOM   3723  CG  PRO   125      -3.179  60.762  30.395  1.00 62.48      L31H C
ATOM   3724  C   PRO   125      -2.189  63.329  32.854  1.00 60.75      L31H C
ATOM   3725  O   PRO   125      -3.210  63.680  33.447  1.00 59.69      L31H O
ATOM   3726  N   SER   126      -1.085  64.066  32.819  1.00 60.32      L31H N
ATOM   3727  CA  SER   126      -1.027  65.390  33.416  1.00 58.57      L31H C
ATOM   3728  CB  SER   126       0.402  65.714  33.827  1.00 58.32      L31H C
ATOM   3729  OG  SER   126       1.278  65.586  32.719  1.00 57.04      L31H O
ATOM   3730  C   SER   126      -1.509  66.446  32.436  1.00 57.83      L31H C
ATOM   3731  O   SER   126      -1.473  66.261  31.223  1.00 56.21      L31H O
ATOM   3732  N   SER   127      -1.959  67.563  32.981  1.00 58.56      L31H N
ATOM   3733  CA  SER   127      -2.261  68.716  32.165  1.00 59.40      L31H C
ATOM   3734  CB  SER   127      -2.431  69.952  33.049  1.00 60.04      L31H C
ATOM   3735  OG  SER   127      -2.162  71.136  32.312  1.00 61.03      L31H O
ATOM   3736  C   SER   127      -1.102  68.934  31.207  1.00 59.25      L31H C
ATOM   3737  O   SER   127      -1.295  69.145  30.009  1.00 59.39      L31H O
ATOM   3738  N   GLU   128       0.106  68.878  31.748  1.00 58.37      L31H N
ATOM   3739  CA  GLU   128       1.282  69.233  30.976  1.00 57.49      L31H C
ATOM   3740  CB  GLU   128       2.533  69.082  31.830  1.00 58.17      L31H C
ATOM   3741  CG  GLU   128       2.688  70.142  32.877  1.00 58.94      L31H C
ATOM   3742  CD  GLU   128       4.104  70.643  32.938  1.00 60.68      L31H C
ATOM   3743  OE1 GLU   128       4.807  70.541  31.902  1.00 61.85      L31H O
ATOM   3744  OE2 GLU   128       4.510  71.133  34.016  1.00 60.55      L31H O
ATOM   3745  C   GLU   128       1.417  68.382  29.728  1.00 55.84      L31H C
ATOM   3746  O   GLU   128       1.695  68.900  28.652  1.00 53.53      L31H O
ATOM   3747  N   GLU   129       1.220  67.074  29.883  1.00 55.94      L31H N
ATOM   3748  CA  GLU   129       1.441  66.128  28.796  1.00 55.91      L31H C
ATOM   3749  CB  GLU   129       1.426  64.694  29.316  1.00 57.14      L31H C
ATOM   3750  CG  GLU   129       2.033  63.697  28.336  1.00 59.19      L31H C
ATOM   3751  CD  GLU   129       1.519  62.287  28.538  1.00 60.92      L31H C
ATOM   3752  OE1 GLU   129       2.071  61.358  27.906  1.00 60.62      L31H O
ATOM   3753  OE2 GLU   129       0.560  62.112  29.328  1.00 61.87      L31H O
ATOM   3754  C   GLU   129       0.363  66.285  27.747  1.00 55.89      L31H C
ATOM   3755  O   GLU   129       0.588  66.057  26.556  1.00 54.96      L31H O
ATOM   3756  N   LEU   130      -0.819  66.671  28.203  1.00 56.93      L31H N
ATOM   3757  CA  LEU   130      -1.917  66.963  27.304  1.00 57.51      L31H C
ATOM   3758  CB  LEU   130      -3.198  67.191  28.112  1.00 57.09      L31H C
ATOM   3759  CG  LEU   130      -4.161  65.989  28.097  1.00 58.06      L31H C
ATOM   3760  CD1 LEU   130      -3.374  64.692  27.940  1.00 56.91      L31H C
ATOM   3761  CD2 LEU   130      -4.999  65.970  29.366  1.00 57.58      L31H C
ATOM   3762  C   LEU   130      -1.578  68.185  26.464  1.00 57.33      L31H C
ATOM   3763  O   LEU   130      -1.741  68.172  25.251  1.00 58.08      L31H O
ATOM   3764  N   GLN   131      -1.082  69.231  27.111  1.00 57.04      L31H N
ATOM   3765  CA  GLN   131      -0.650  70.424  26.402  1.00 56.50      L31H C
ATOM   3766  CB  GLN   131      -0.101  71.447  27.389  1.00 56.13      L31H C
ATOM   3767  CG  GLN   131      -1.142  72.340  27.972  1.00 59.45      L31H C
ATOM   3768  CD  GLN   131      -1.880  73.113  26.905  1.00 61.61      L31H G
ATOM   3769  OE1 GLN   131      -3.018  73.544  27.114  1.00 61.71      L31H O
ATOM   3770  NE2 GLN   131      -1.237  73.294  25.746  1.00 60.83      L31H N
ATOM   3771  C   GLN   131       0.412  70.139  25.340  1.00 57.13      L31H C
ATOM   3772  O   GLN   131       0.656  70.959  24.457  1.00 58.38      L31H O
ATOM   3773  N   ALA   132       1.063  68.989  25.431  1.00 56.27      L31H N
ATOM   3774  CA  ALA   132       2.122  68.660  24.493  1.00 54.83      L31H C
ATOM   3775  CB  ALA   132       3.210  67.886  25.199  1.00 53.35      L31H C
ATOM   3776  C   ALA   132       1.517  67.830  23.380  1.00 54.99      L31H C
ATOM   3777  O   ALA   132       2.218  67.361  22.484  1.00 53.23      L31H O
ATOM   3778  N   ASN   133       0.199  67.664  23.465  1.00 56.66      L31H N
ATOM   3779  CA  ASN   133      -0.592  66.906  22.499  1.00 58.35      L31H C
ATOM   3780  CB  ASN   133      -0.380  67.464  21.083  1.00 61.86      L31H C
ATOM   3781  CG  ASN   133      -1.567  67.198  20.149  1.00 63.84      L31H C
ATOM   3782  OD1 ASN   133      -2.663  67.756  20.322  1.00 64.92      L31H O
ATOM   3783  ND2 ASN   133      -1.345  66.348  19.148  1.00 63.87      L31H N
ATOM   3784  C   ASN   133      -0.235  65.419  22.562  1.00 58.50      L31H C
ATOM   3785  O   ASN   133      -0.227  64.719  21.542  1.00 58.17      L31H O
ATOM   3786  N   LYS   134       0.070  64.950  23.772  1.00 57.34      L31H N
ATOM   3787  CA  LYS   134       0.210  63.523  24.045  1.00 55.52      L31H C
ATOM   3788  CB  LYS   134       1.676  63.178  24.266  1.00 54.57      L31H C
ATOM   3789  CG  LYS   134       2.559  63.429  23.065  1.00 53.32      L31H C
ATOM   3790  CD  LYS   134       2.539  62.241  22.131  1.00 53.44      L31H C
ATOM   3791  CE  LYS   134       3.597  62.364  21.049  1.00 52.60      L31H C
ATOM   3792  NZ  LYS   134       4.983  62.412  21.589  1.00 51.62      L31H N
ATOM   3793  C   LYS   134      -0.595  63.141  25.284  1.00 55.69      L31H C
ATOM   3794  O   LYS   134      -1.126  64.002  25.987  1.00 56.06      L31H O
ATOM   3795  N   ALA   135      -0.696  61.845  25.545  1.00 55.25      L31H N
ATOM   3796  CA  ALA   135      -1.287  61.365  26.793  1.00 55.37      L31H C
ATOM   3797  CB  ALA   135      -2.810  61.336  26.681  1.00 53.00      L31H C
ATOM   3798  C   ALA   135      -0.749  59.973  27.120  1.00 55.35      L31H C
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ATOM	3799	O	ALA	135	-0.805	59.060	26.292	1.00	56.00	L31H O
ATOM	3800	N	THR	136	-0.202	59.818	28.319	1.00	54.87	L31H N
ATOM	3801	CA	THR	136	0.250	58.511	28.754	1.00	54.77	L31H C
ATOM	3802	CB	THR	136	1.772	58.447	28.819	1.00	53.90	L31H C
ATOM	3803	OG1	THR	136	2.306	58.645	27.506	1.00	55.20	L31H O
ATOM	3804	CG2	THR	136	2.223	57.086	29.318	1.00	53.01	L31H C
ATOM	3805	C	THR	136	-0.323	58.080	30.095	1.00	55.19	L31H C
ATOM	3806	O	THR	136	-0.081	58.710	31.121	1.00	55.30	L31H O
ATOM	3807	N	LEU	137	-1.091	56.998	30.063	1.00	56.06	L31H N
ATOM	3808	CA	LEU	137	-1.559	56.333	31.267	1.00	57.51	L31H C
ATOM	3809	CB	LEU	137	-2.723	55.396	30.931	1.00	58.17	L31H C
ATOM	3810	CG	LEU	137	-3.954	56.062	30.301	1.00	60.61	L31H C
ATOM	3811	CD1	LEU	137	-5.070	55.038	30.171	1.00	60.26	L31H C
ATOM	3812	CD2	LEU	137	-4.420	57.243	31.159	1.00	60.91	L31H C
ATOM	3813	C	LEU	137	-0.418	55.534	31.885	1.00	58.44	L31H C
ATOM	3814	O	LEU	137	0.310	54.813	31.193	1.00	58.78	L31H O
ATOM	3815	N	VAL	138	-0.258	55.663	33.195	1.00	59.31	L31H N
ATOM	3816	CA	VAL	138	0.802	54.944	33.890	1.00	60.22	L31H C
ATOM	3817	CB	VAL	138	1.685	55.916	34.681	1.00	58.67	L31H C
ATOM	3818	CG1	VAL	138	2.717	55.158	35.481	1.00	57.67	L31H C
ATOM	3819	CG2	VAL	138	2.366	56.864	33.724	1.00	59.34	L31H C
ATOM	3820	C	VAL	138	0.203	53.921	34.841	1.00	62.22	L31H C
ATOM	3821	O	VAL	138	-0.596	54.272	35.705	1.00	62.49	L31H O
ATOM	3822	N	CYS	139	0.577	52.656	34.674	1.00	64.39	L31H N
ATOM	3823	CA	CYS	139	0.107	51.607	35.574	1.00	66.45	L31H C
ATOM	3824	C	CYS	139	1.281	50.907	36.234	1.00	63.76	L31H C
ATOM	3825	O	CYS	139	2.050	50.208	35.569	1.00	63.60	L31H O
ATOM	3826	CB	CYS	139	-0.727	50.580	34.808	1.00	72.30	L31H C
ATOM	3827	SG	CYS	139	-1.495	49.302	35.852	1.00	80.69	L31H S
ATOM	3828	N	LEU	140	1.411	51.086	37.543	1.00	61.42	L31H N
ATOM	3829	CA	LEU	140	2.547	50.527	38.267	1.00	61.83	L31H C
ATOM	3830	CB	LEU	140	3.230	51.624	39.082	1.00	59.77	L31H C
ATOM	3831	CG	LEU	140	3.587	52.822	38.205	1.00	57.02	L31H C
ATOM	3832	CD1	LEU	140	3.474	54.095	38.989	1.00	56.73	L31H C
ATOM	3833	CD2	LEU	140	4.975	52.644	37.659	1.00	58.13	L31H C
ATOM	3834	C	LEU	140	2.139	49.368	39.174	1.00	62.96	L31H C
ATOM	3835	O	LEU	140	1.163	49.458	39.926	1.00	61.87	L31H O
ATOM	3836	N	ILE	141	2.895	48.278	39.080	1.00	64.43	L31H N
ATOM	3837	CA	ILE	141	2.601	47.052	39.812	1.00	65.71	L31H C
ATOM	3838	CB	ILE	141	2.208	45.926	38.839	1.00	65.35	L31H C
ATOM	3839	CG2	ILE	141	2.084	44.602	39.581	1.00	65.06	L31H C
ATOM	3840	CG1	ILE	141	0.905	46.292	38.129	1.00	65.30	L31H C
ATOM	3841	CD1	ILE	141	1.111	46.923	36.776	1.00	65.52	L31H C
ATOM	3842	C	ILE	141	3.813	46.593	40.629	1.00	67.11	L31H C
ATOM	3843	O	ILE	141	4.911	46.420	40.094	1.00	66.16	L31H O
ATOM	3844	N	SER	142	3.614	46.394	41.926	1.00	68.80	L31H N
ATOM	3845	CA	SER	142	4.703	45.941	42.774	1.00	69.99	L31H C
ATOM	3846	CB	SER	142	5.371	47.130	43.465	1.00	69.56	L31H C
ATOM	3847	OG	SER	142	4.482	47.762	44.364	1.00	69.04	L31H O
ATOM	3848	C	SER	142	4.237	44.946	43.824	1.00	72.02	L31H C
ATOM	3849	O	SER	142	3.041	44.825	44.099	1.00	70.57	L31H O
ATOM	3850	N	ASP	143	5.205	44.232	44.395	1.00	75.76	L31H N
ATOM	3851	CA	ASP	143	4.990	43.387	45.561	1.00	79.15	L31H C
ATOM	3852	CB	ASP	143	4.247	44.172	46.652	1.00	79.95	L31H C
ATOM	3853	CG	ASP	143	5.084	45.303	47.236	1.00	81.27	L31H C
ATOM	3854	OD1	ASP	143	6.124	45.652	46.640	1.00	83.43	L31H O
ATOM	3855	OD2	ASP	143	4.703	45.845	48.296	1.00	82.20	L31H O
ATOM	3856	C	ASP	143	4.222	42.122	45.217	1.00	81.34	L31H C
ATOM	3857	O	ASP	143	3.249	41.777	45.886	1.00	81.70	L31H O
ATOM	3858	N	PHE	144	4.654	41.430	44.169	1.00	84.09	L31H N
ATOM	3859	CA	PHE	144	4.002	40.183	43.793	1.00	88.16	L31H C
ATOM	3860	CB	PHE	144	3.227	40.352	42.485	1.00	86.52	L31H C
ATOM	3861	CG	PHE	144	4.030	40.953	41.371	1.00	84.52	L31H C
ATOM	3862	CD1	PHE	144	4.561	40.153	40.376	1.00	83.55	L31H C
ATOM	3863	CD2	PHE	144	4.236	42.319	41.305	1.00	83.02	L31H C
ATOM	3864	CE1	PHE	144	5.282	40.705	39.338	1.00	81.29	L31H C
ATOM	3865	CE2	PHE	144	4.956	42.875	40.269	1.00	81.03	L31H C
ATOM	3866	CZ	PHE	144	5.479	42.069	39.285	1.00	80.66	L31H C
ATOM	3867	C	PHE	144	4.974	39.018	43.670	1.00	91.37	L31H C
ATOM	3868	O	PHE	144	6.103	39.178	43.200	1.00	92.48	L31H O
ATOM	3869	N	TYR	145	4.523	37.846	44.109	1.00	93.82	L31H N
ATOM	3870	CA	TYR	145	5.322	36.629	44.038	1.00	94.58	L31H C
ATOM	3871	CB	TYR	145	6.216	36.500	45.271	1.00	95.09	L31H C
ATOM	3872	CG	TYR	145	7.203	35.361	45.180	1.00	95.11	L31H C
ATOM	3873	CD1	TYR	145	7.035	34.210	45.932	1.00	95.46	L31H C
ATOM	3874	CE1	TYR	145	7.939	33.165	45.850	1.00	95.67	L31H C

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ATOM   3875  CD2 TYR   145       8.306  35.437  44.336  1.00 95.57      L31H C
ATOM   3876  CE2 TYR   145       9.215  34.397  44.245  1.00 95.35      L31H C
ATOM   3877  CZ  TYR   145       9.027  33.263  45.007  1.00 95.54      L31H C
ATOM   3878  OH  TYR   145       9.933  32.230  44.935  1.00 93.89      L31H O
ATOM   3879  C   TYR   145       4.411  35.416  43.947  1.00 96.10      L31H C
ATOM   3880  O   TYR   145       3.405  35.334  44.649  1.00 95.23      L31H O
ATOM   3881  N   PRO   146       4.754  34.459  43.072  1.00 98.97      L31H N
ATOM   3882  CD  PRO   146       3.974  33.236  42.816  1.00102.65      L31H C
ATOM   3883  CA  PRO   146       5.945  34.535  42.217  1.00100.63      L31H C
ATOM   3884  CB  PRO   146       5.996  33.161  41.552  1.00103.16      L31H C
ATOM   3885  CG  PRO   146       4.586  32.692  41.560  1.00103.82      L31H C
ATOM   3886  C   PRO   146       5.880  35.673  41.196  1.00101.63      L31H C
ATOM   3887  O   PRO   146       4.796  36.118  40.814  1.00101.06      L31H O
ATOM   3888  N   GLY   147       7.048  36.141  40.764  1.00103.99      L31H N
ATOM   3889  CA  GLY   147       7.104  37.257  39.837  1.00106.69      L31H C
ATOM   3890  C   GLY   147       6.669  36.921  38.428  1.00107.75      L31H C
ATOM   3891  O   GLY   147       7.498  36.741  37.535  1.00109.16      L31H O
ATOM   3892  N   ALA   148       5.358  36.841  38.231  1.00106.88      L31H N
ATOM   3893  CA  ALA   148       4.796  36.566  36.918  1.00106.36      L31H C
ATOM   3894  CB  ALA   148       4.810  35.069  36.644  1.00106.24      L31H C
ATOM   3895  C   ALA   148       3.375  37.101  36.844  1.00106.36      L31H C
ATOM   3896  O   ALA   148       2.477  36.607  37.521  1.00105.85      L31H O
ATOM   3897  N   VAL   149       3.183  38.118  36.014  1.00107.52      L31H N
ATOM   3898  CA  VAL   149       1.890  38.766  35.871  1.00108.34      L31H C
ATOM   3899  CB  VAL   149       1.857  40.102  36.625  1.00108.35      L31H C
ATOM   3900  CG1 VAL   149       1.858  39.856  38.121  1.00108.86      L31H C
ATOM   3901  CG2 VAL   149       3.069  40.938  36.237  1.00108.49      L31H C
ATOM   3902  C   VAL   149       1.609  39.033  34.405  1.00108.11      L31H C
ATOM   3903  O   VAL   149       2.528  39.094  33.591  1.00108.80      L31H O
ATOM   3904  N   THR   150       0.332  39.186  34.075  1.00107.28      L31H N
ATOM   3905  CA  THR   150      -0.069  39.576  32.733  1.00106.06      L31H C
ATOM   3906  CB  THR   150      -0.798  38.439  32.011  1.00105.51      L31H C
ATOM   3907  OG1 THR   150       0.127  37.386  31.725  1.00104.72      L31H O
ATOM   3908  CG2 THR   150      -1.410  38.938  30.715  1.00104.90      L31H C
ATOM   3909  C   THR   150      -1.005  40.760  32.824  1.00105.63      L31H C
ATOM   3910  O   THR   150      -1.935  40.756  33.628  1.00106.26      L31H O
ATOM   3911  N   VAL   151      -0.758  41.770  31.995  1.00104.86      L31H N
ATOM   3912  CA  VAL   151      -1.558  42.992  32.022  1.00103.61      L31H C
ATOM   3913  CB  VAL   151      -0.663  44.254  31.995  1.00103.81      L31H C
ATOM   3914  CG1 VAL   151      -1.530  45.510  32.047  1.00103.60      L31H C
ATOM   3915  CG2 VAL   151       0.305  44.226  33.166  1.00102.99      L31H C
ATOM   3916  C   VAL   151      -2.544  43.072  30.861  1.00101.69      L31H C
ATOM   3917  O   VAL   151      -2.207  42.743  29.721  1.00101.44      L31H O
ATOM   3918  N   ALA   152      -3.763  43.506  31.166  1.00 99.44      L31H N
ATOM   3919  CA  ALA   152      -4.775  43.731  30.147  1.00 97.98      L31H C
ATOM   3920  CB  ALA   152      -5.788  42.600  30.161  1.00 96.47      L31H C
ATOM   3921  C   ALA   152      -5.466  45.056  30.423  1.00 97.32      L31H C
ATOM   3922  O   ALA   152      -6.002  45.269  31.511  1.00 98.16      L31H O
ATOM   3923  N   TRP   153      -5.452  45.947  29.436  1.00 95.82      L31H N
ATOM   3924  CA  TRP   153      -6.007  47.285  29.607  1.00 94.83      L31H C
ATOM   3925  CB  TRP   153      -5.149  48.311  28.857  1.00 89.61      L31H C
ATOM   3926  CG  TRP   153      -3.833  48.634  29.516  1.00 83.09      L31H C
ATOM   3927  CD2 TRP   153      -3.550  49.759  30.356  1.00 80.15      L31H C
ATOM   3928  CE2 TRP   153      -2.188  49.674  30.724  1.00 78.88      L31H C
ATOM   3929  CE3 TRP   153      -4.315  50.829  30.832  1.00 78.10      L31H C
ATOM   3930  CD1 TRP   153      -2.665  47.932  29.413  1.00 81.18      L31H C
ATOM   3931  NE1 TRP   153      -1.672  48.551  30.136  1.00 78.50      L31H N
ATOM   3932  CZ2 TRP   153      -1.576  50.618  31.544  1.00 78.36      L31H C
ATOM   3933  CZ3 TRP   153      -3.709  51.765  31.645  1.00 78.62      L31H C
ATOM   3934  CH2 TRP   153      -2.349  51.654  31.994  1.00 79.04      L31H C
ATOM   3935  C   TRP   153      -7.444  47.361  29.102  1.00 97.21      L31H C
ATOM   3936  O   TRP   153      -7.772  46.810  28.054  1.00 97.31      L31H O
ATOM   3937  N   LYS   154      -8.301  48.046  29.846  1.00100.61      L31H N
ATOM   3938  CA  LYS   154      -9.645  48.314  29.366  1.00104.68      L31H C
ATOM   3939  CB  LYS   154     -10.688  47.950  30.422  1.00104.13      L31H C
ATOM   3940  CG  LYS   154     -10.824  46.462  30.667  1.00104.81      L31H C
ATOM   3941  CD  LYS   154     -10.929  45.698  29.358  1.00106.43      L31H C
ATOM   3942  CE  LYS   154     -10.925  44.196  29.604  1.00108.33      L31H C
ATOM   3943  NZ  LYS   154      -9.774  43.768  30.447  1.00112.27      L31H N
ATOM   3944  C   LYS   154      -9.791  49.775  29.011  1.00108.13      L31H C
ATOM   3945  O   LYS   154      -9.726  50.643  29.883  1.00108.54      L31H O
ATOM   3946  N   ALA   155      -9.987  50.038  27.723  1.00112.59      L31H N
ATOM   3947  CA  ALA   155     -10.381  51.360  27.258  1.00115.22      L31H C
ATOM   3948  CB  ALA   155     -10.121  51.488  25.761  1.00118.02      L31H C
ATOM   3949  C   ALA   155     -11.865  51.528  27.555  1.00116.52      L31H C
ATOM   3950  O   ALA   155     -12.712  50.944  26.879  1.00115.14      L31H O
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ATOM   3951  N   ASP   156     -12.170  52.324  28.575  1.00118.91      L31H N
ATOM   3952  CA  ASP   156     -13.519  52.392  29.120  1.00122.96      L31H C
ATOM   3953  CB  ASP   156     -14.509  52.810  28.028  1.00123.77      L31H C
ATOM   3954  CG  ASP   156     -15.840  53.254  28.589  1.00125.04      L31H C
ATOM   3955  OD1 ASP   156     -16.106  54.475  28.587  1.00126.49      L31H O
ATOM   3956  OD2 ASP   156     -16.619  52.382  29.031  1.00126.62      L31H O
ATOM   3957  C   ASP   156     -13.885  51.016  29.676  1.00125.66      L31H C
ATOM   3958  O   ASP   156     -13.474  50.653  30.779  1.00124.90      L31H O
ATOM   3959  N   SER   157     -14.649  50.251  28.905  1.00129.31      L31H N
ATOM   3960  CA  SER   157     -14.951  48.869  29.257  1.00133.75      L31H C
ATOM   3961  CB  SER   157     -16.420  48.739  29.660  1.00133.49      L31H C
ATOM   3962  OG  SER   157     -16.729  49.610  30.736  1.00132.03      L31H O
ATOM   3963  C   SER   157     -14.651  47.984  28.055  1.00136.62      L31H C
ATOM   3964  O   SER   157     -14.649  46.755  28.146  1.00137.92      L31H O
ATOM   3965  N   SER   158     -14.401  48.632  26.923  1.00138.76      L31H N
ATOM   3966  CA  SER   158     -13.950  47.944  25.725  1.00139.39      L31H C
ATOM   3967  CB  SER   158     -14.216  48.808  24.492  1.00138.66      L31H C
ATOM   3968  OG  SER   158     -15.557  49.263  24.468  1.00135.17      L31H O
ATOM   3969  C   SER   158     -12.456  47.666  25.845  1.00140.86      L31H C
ATOM   3970  O   SER   158     -11.651  48.583  26.018  1.00142.39      L31H O
ATOM   3971  N   PRO   159     -12.071  46.386  25.760  1.00141.72      L31H N
ATOM   3972  CD  PRO   159     -13.033  45.270  25.740  1.00142.52      L31H C
ATOM   3973  CA  PRO   159     -10.681  45.914  25.858  1.00142.97      L31H C
ATOM   3974  CB  PRO   159     -10.818  44.391  25.810  1.00142.77      L31H C
ATOM   3975  CG  PRO   159     -12.225  44.122  26.262  1.00142.30      L31H C
ATOM   3976  C   PRO   159      -9.746  46.433  24.755  1.00144.51      L31H C
ATOM   3977  O   PRO   159      -9.762  45.930  23.629  1.00144.32      L31H O
ATOM   3978  N   VAL   160      -8.920  47.423  25.088  1.00145.75      L31H N
ATOM   3979  CA  VAL   160      -7.951  47.968  24.140  1.00146.54      L31H C
ATOM   3980  CB  VAL   160      -7.373  49.294  24.640  1.00145.44      L31H C
ATOM   3981  CG1 VAL   160      -6.897  49.139  26.068  1.00144.76      L31H C
ATOM   3982  CG2 VAL   160      -6.214  49.715  23.754  1.00144.65      L31H C
ATOM   3983  C   VAL   160      -6.786  47.017  23.892  1.00147.40      L31H C
ATOM   3984  O   VAL   160      -6.278  46.393  24.820  1.00149.15      L31H O
ATOM   3985  N   LYS   161      -6.360  46.921  22.637  1.00147.17      L31H N
ATOM   3986  CA  LYS   161      -5.296  45.995  22.257  1.00146.00      L31H C
ATOM   3987  CB  LYS   161      -5.794  45.039  21.166  1.00149.06      L31H C
ATOM   3988  CG  LYS   161      -7.090  44.313  21.506  1.00152.58      L31H C
ATOM   3989  CD  LYS   161      -6.931  43.408  22.719  1.00155.68      L31H C
ATOM   3990  CE  LYS   161      -8.256  42.765  23.106  1.00157.97      L31H C
ATOM   3991  NZ  LYS   161      -8.862  42.009  21.976  1.00159.35      L31H N
ATOM   3992  C   LYS   161      -4.035  46.712  21.766  1.00143.65      L31H C
ATOM   3993  O   LYS   161      -2.954  46.121  21.722  1.00142.97      L31H O
ATOM   3994  N   ALA   162      -4.175  47.981  21.391  1.00141.12      L31H N
ATOM   3995  CA  ALA   162      -3.054  48.748  20.855  1.00137.51      L31H C
ATOM   3996  CB  ALA   162      -3.354  49.183  19.427  1.00139.76      L31H C
ATOM   3997  C   ALA   162      -2.743  49.966  21.716  1.00134.24      L31H C
ATOM   3998  O   ALA   162      -3.619  50.502  22.395  1.00132.85      L31H O
ATOM   3999  N   GLY   163      -1.489  50.399  21.680  1.00130.13      L31H N
ATOM   4000  CA  GLY   163      -1.082  51.547  22.469  1.00125.56      L31H C
ATOM   4001  C   GLY   163      -0.547  51.148  23.829  1.00122.13      L31H C
ATOM   4002  O   GLY   163      -0.385  51.983  24.719  1.00122.41      L31H O
ATOM   4003  N   VAL   164      -0.274  49.859  23.989  1.00117.65      L31H N
ATOM   4004  CA  VAL   164       0.178  49.329  25.264  1.00112.18      L31H C
ATOM   4005  CB  VAL   164      -0.770  48.246  25.771  1.00111.56      L31H C
ATOM   4006  CG1 VAL   164      -0.274  47.711  27.098  1.00110.84      L31H C
ATOM   4007  CG2 VAL   164      -2.169  48.805  25.897  1.00110.72      L31H C
ATOM   4008  C   VAL   164       1.563  48.721  25.145  1.00108.74      L31H C
ATOM   4009  O   VAL   164       1.923  48.178  24.104  1.00109.80      L31H O
ATOM   4010  N   GLU   165       2.340  48.810  26.214  1.00103.31      L31H N
ATOM   4011  CA  GLU   165       3.605  48.099  26.271  1.00 97.93      L31H C
ATOM   4012  CB  GLU   165       4.683  48.891  25.534  1.00 99.42      L31H C
ATOM   4013  CG  GLU   165       5.841  48.038  25.045  1.00102.44      L31H C
ATOM   4014  CD  GLU   165       6.165  48.284  23.583  1.00104.36      L31H C
ATOM   4015  OE1 GLU   165       6.303  47.296  22.829  1.00105.42      L31H O
ATOM   4016  OE2 GLU   165       6.281  49.467  23.191  1.00105.49      L31H O
ATOM   4017  C   GLU   165       4.004  47.874  27.725  1.00 93.34      L31H C
ATOM   4018  O   GLU   165       4.181  48.826  28.484  1.00 92.89      L31H O
ATOM   4019  N   THR   166       4.132  46.610  28.113  1.00 87.51      L31H N
ATOM   4020  CA  THR   166       4.417  46.263  29.498  1.00 82.22      L31H C
ATOM   4021  CB  THR   166       3.504  45.138  29.970  1.00 79.71      L31H C
ATOM   4022  OG1 THR   166       2.136  45.535  29.821  1.00 77.59      L31H O
ATOM   4023  CG2 THR   166       3.784  44.814  31.415  1.00 78.67      L31H C
ATOM   4024  C   THR   166       5.862  45.805  29.647  1.00 81.16      L31H C
ATOM   4025  O   THR   166       6.469  45.332  28.687  1.00 81.15      L31H O
ATOM   4026  N   THR   167       6.425  45.953  30.842  1.00 79.71      L31H N
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ATOM   4027  CA  THR   167       7.755  45.411  31.101  1.00 78.78      L31H C
ATOM   4028  CB  THR   167       8.555  46.266  32.125  1.00 77.41      L31H C
ATOM   4029  OG1 THR   167       7.949  46.166  33.418  1.00 75.88      L31H O
ATOM   4030  CG2 THR   167       8.588  47.723  31.701  1.00 75.26      L31H C
ATOM   4031  C   THR   167       7.640  43.990  31.650  1.00 79.22      L31H C
ATOM   4032  O   THR   167       6.599  43.588  32.174  1.00 79.15      L31H O
ATOM   4033  N   THR   168       8.714  43.226  31.515  1.00 79.89      L31H N
ATOM   4034  CA  THR   168       8.823  41.965  32.220  1.00 80.51      L31H C
ATOM   4035  CB  THR   168       9.904  41.072  31.594  1.00 80.02      L31H C
ATOM   4036  OG1 THR   168      11.170  41.744  31.649  1.00 80.02      L31H O
ATOM   4037  CG2 THR   168       9.553  40.758  30.139  1.00 78.70      L31H C
ATOM   4038  C   THR   168       9.194  42.275  33.664  1.00 81.33      L31H C
ATOM   4039  O   THR   168      10.021  43.149  33.937  1.00 80.31      L31H O
ATOM   4040  N   PRO   169       8.570  41.565  34.609  1.00 82.60      L31H N
ATOM   4041  CD  PRO   169       7.606  40.479  34.373  1.00 80.47      L31H C
ATOM   4042  CA  PRO   169       8.725  41.854  36.035  1.00 85.29      L31H C
ATOM   4043  CB  PRO   169       7.885  40.775  36.706  1.00 82.01      L31H C
ATOM   4044  CG  PRO   169       6.876  40.399  35.673  1.00 79.24      L31H C
ATOM   4045  C   PRO   169      10.179  41.824  36.483  1.00 89.48      L31H C
ATOM   4046  O   PRO   169      11.051  41.286  35.797  1.00 91.81      L31H O
ATOM   4047  N   SER   170      10.437  42.412  37.642  1.00 92.27      L31H N
ATOM   4048  CA  SER   170      11.800  42.582  38.105  1.00 94.31      L31H C
ATOM   4049  CB  SER   170      12.258  44.010  37.807  1.00 94.07      L31H C
ATOM   4050  OG  SER   170      13.452  44.326  38.498  1.00 89.69      L31H O
ATOM   4051  C   SER   170      11.886  42.300  39.596  1.00 96.61      L31H C
ATOM   4052  O   SER   170      10.964  42.609  40.347  1.00 97.99      L31H O
ATOM   4053  N   LYS   171      12.996  41.707  40.020  1.00 98.61      L31H N
ATOM   4054  CA  LYS   171      13.235  41.485  41.439  1.00 99.91      L31H C
ATOM   4055  CB  LYS   171      14.609  40.856  41.664  1.00100.64      L31H C
ATOM   4056  CG  LYS   171      14.768  39.457  41.092  1.00103.49      L31H C
ATOM   4057  CD  LYS   171      14.183  38.400  42.018  1.00108.13      L31H C
ATOM   4058  CE  LYS   171      14.654  37.002  41.624  1.00111.94      L31H C
ATOM   4059  NZ  LYS   171      14.016  35.924  42.438  1.00117.51      L31H N
ATOM   4060  C   LYS   171      13.173  42.814  42.164  1.00 99.93      L31H C
ATOM   4061  O   LYS   171      13.773  43.791  41.727  1.00 99.84      L31H O
ATOM   4062  N   GLN   172      12.443  42.848  43.271  1.00100.47      L31H N
ATOM   4063  CA  GLN   172      12.382  44.039  44.101  1.00101.48      L31H C
ATOM   4064  CB  GLN   172      11.002  44.178  44.740  1.00 98.99      L31H C
ATOM   4065  CG  GLN   172       9.949  44.798  43.840  1.00 94.44      L31H C
ATOM   4066  CD  GLN   172       8.802  45.394  44.630  1.00 91.26      L31H C
ATOM   4067  OE1 GLN   172       7.771  44.757  44.825  1.00 89.71      L31H O
ATOM   4068  NE2 GLN   172       8.980  46.626  45.093  1.00 89.08      L31H N
ATOM   4069  C   GLN   172      13.436  43.996  45.196  1.00103.90      L31H C
ATOM   4070  O   GLN   172      13.942  42.926  45.546  1.00104.53      L31H O
ATOM   4071  N   SER   173      13.763  45.167  45.735  1.00106.09      L31H N
ATOM   4072  CA  SER   173      14.639  45.244  46.892  1.00107.30      L31H C
ATOM   4073  CB  SER   173      14.693  46.685  47.431  1.00108.22      L31H C
ATOM   4074  OG  SER   173      13.400  47.231  47.635  1.00109.67      L31H O
ATOM   4075  C   SER   173      14.121  44.284  47.960  1.00107.59      L31H C
ATOM   4076  O   SER   173      14.899  43.592  48.609  1.00107.41      L31H O
ATOM   4077  N   ASN   174      12.802  44.221  48.118  1.00108.22      L31H N
ATOM   4078  CA  ASN   174      12.195  43.317  49.091  1.00109.03      L31H C
ATOM   4079  CB  ASN   174      10.791  43.792  49.460  1.00111.08      L31H C
ATOM   4080  CG  ASN   174       9.730  43.232  48.535  1.00113.10      L31H C
ATOM   4081  OD1 ASN   174       9.974  43.021  47.348  1.00114.08      L31H O
ATOM   4082  ND2 ASN   174       8.542  42.986  49.077  1.00114.85      L31H N
ATOM   4083  C   ASN   174      12.115  41.888  48.559  1.00108.23      L31H C
ATOM   4084  O   ASN   174      11.580  41.004  49.227  1.00108.50      L31H O
ATOM   4085  N   ASN   175      12.624  41.672  47.350  1.00106.34      L31H N
ATOM   4086  CA  ASN   175      12.779  40.328  46.804  1.00103.04      L31H C
ATOM   4087  CB  ASN   175      13.367  39.407  47.868  1.00105.63      L31H C
ATOM   4088  CG  ASN   175      13.858  38.101  47.294  1.00108.23      L31H C
ATOM   4089  OD1 ASN   175      13.064  37.240  46.912  1.00110.12      L31H O
ATOM   4090  ND2 ASN   175      15.175  37.942  47.226  1.00108.79      L31H N
ATOM   4091  C   ASN   175      11.488  39.719  46.243  1.00 98.67      L31H C
ATOM   4092  O   ASN   175      11.485  38.590  45.754  1.00 98.94      L31H O
ATOM   4093  N   LYS   176      10.391  40.467  46.316  1.00 92.52      L31H N
ATOM   4094  CA  LYS   176       9.232  40.193  45.467  1.00 84.85      L31H C
ATOM   4095  CB  LYS   176       7.957  40.777  46.076  1.00 82.79      L31H C
ATOM   4096  CG  LYS   176       7.607  40.260  47.446  1.00 78.63      L31H C
ATOM   4097  CD  LYS   176       6.213  40.708  47.808  1.00 76.31      L31H C
ATOM   4098  CE  LYS   176       5.944  40.605  49.289  1.00 74.93      L31H C
ATOM   4099  NZ  LYS   176       4.626  41.208  49.610  1.00 73.02      L31H N
ATOM   4100  C   LYS   176       9.475  40.837  44.101  1.00 81.53      L31H C
ATOM   4101  O   LYS   176      10.603  41.215  43.777  1.00 79.55      L31H O
ATOM   4102  N   TYR   177       8.422  40.980  43.303  1.00 78.56      L31H N
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ATOM   4103  CA  TYR   177       8.594  41.559  41.979  1.00 75.70      L31H C
ATOM   4104  CB  TYR   177       8.269  40.518  40.916  1.00 75.16      L31H C
ATOM   4105  CG  TYR   177       9.271  39.394  40.898  1.00 76.26      L31H C
ATOM   4106  CD1 TYR   177      10.276  39.349  39.948  1.00 75.58      L31H C
ATOM   4107  CE1 TYR   177      11.193  38.328  39.940  1.00 76.47      L31H C
ATOM   4108  CD2 TYR   177       9.216  38.380  41.843  1.00 76.97      L31H C
ATOM   4109  CE2 TYR   177      10.126  37.357  41.839  1.00 76.87      L31H C
ATOM   4110  CZ  TYR   177      11.110  37.333  40.888  1.00 76.76      L31H C
ATOM   4111  OH  TYR   177      12.005  36.293  40.877  1.00 79.13      L31H O
ATOM   4112  C   TYR   177       7.812  42.834  41.716  1.00 73.16      L31H C
ATOM   4113  O   TYR   177       6.801  43.111  42.357  1.00 73.48      L31H O
ATOM   4114  N   ALA   178       8.318  43.607  40.762  1.00 69.40      L31H N
ATOM   4115  CA  ALA   178       7.723  44.872  40.352  1.00 65.29      L31H C
ATOM   4116  CB  ALA   178       8.625  46.036  40.787  1.00 64.49      L31H C
ATOM   4117  C   ALA   178       7.592  44.852  38.833  1.00 62.74      L31H C
ATOM   4118  O   ALA   178       8.361  44.165  38.156  1.00 62.95      L31H O
ATOM   4119  N   ALA   179       6.626  45.596  38.303  1.00 59.52      L31H N
ATOM   4120  CA  ALA   179       6.476  45.723  36.858  1.00 57.65      L31H C
ATOM   4121  CB  ALA   179       5.974  44.401  36.267  1.00 57.21      L31H C
ATOM   4122  C   ALA   179       5.532  46.863  36.473  1.00 56.23      L31H C
ATOM   4123  O   ALA   179       4.528  47.116  37.144  1.00 56.72      L31H O
ATOM   4124  N   SER   180       5.854  47.546  35.384  1.00 53.90      L31H N
ATOM   4125  CA  SER   180       5.019  48.640  34.912  1.00 53.09      L31H C
ATOM   4126  CB  SER   180       5.809  49.954  34.967  1.00 51.19      L31H C
ATOM   4127  OG  SER   180       7.114  49.791  34.444  1.00 48.03      L31H O
ATOM   4128  C   SER   180       4.470  48.407  33.501  1.00 53.56      L31H C
ATOM   4129  O   SER   180       5.167  47.884  32.629  1.00 52.95      L31H O
ATOM   4130  N   SER   181       3.216  48.796  33.288  1.00 53.75      L31H N
ATOM   4131  CA  SER   181       2.627  48.783  31.956  1.00 56.72      L31H C
ATOM   4132  CB  SER   181       1.489  47.762  31.910  1.00 58.34      L31H C
ATOM   4133  OG  SER   181       1.028  47.549  30.587  1.00 61.46      L31H O
ATOM   4134  C   SER   181       2.091  50.181  31.607  1.00 58.40      L31H C
ATOM   4135  O   SER   181       1.392  50.804  32.417  1.00 58.88      L31H O
ATOM   4136  N   TYR   182       2.415  50.674  30.410  1.00 59.24      L31H N
ATOM   4137  CA  TYR   182       1.992  52.020  29.994  1.00 60.58      L31H C
ATOM   4138  CB  TYR   182       3.190  52.839  29.526  1.00 59.97      L31H C
ATOM   4139  CG  TYR   182       4.257  53.031  30.567  1.00 61.07      L31H C
ATOM   4140  CD1 TYR   182       5.161  52.024  30.852  1.00 61.25      L31H C
ATOM   4141  CE1 TYR   182       6.159  52.208  31.783  1.00 63.96      L31H C
ATOM   4142  CD2 TYR   182       4.377  54.231  31.243  1.00 62.41      L31H C
ATOM   4143  CE2 TYR   182       5.369  54.430  32.177  1.00 64.17      L31H C
ATOM   4144  CZ  TYR   182       6.264  53.417  32.449  1.00 65.02      L31H C
ATOM   4145  OH  TYR   182       7.264  53.619  33.386  1.00 64.46      L31H O
ATOM   4146  C   TYR   182       0.971  51.977  28.863  1.00 61.39      L31H C
ATOM   4147  O   TYR   182       1.008  51.070  28.025  1.00 61.61      L31H O
ATOM   4148  N   LEU   183       0.077  52.965  28.831  1.00 61.88      L31H N
ATOM   4149  CA  LEU   183      -0.935  53.053  27.777  1.00 63.70      L31H C
ATOM   4150  CB  LEU   183      -2.328  52.847  28.354  1.00 62.49      L31H C
ATOM   4151  CG  LEU   183      -3.392  52.953  27.265  1.00 61.82      L31H C
ATOM   4152  CD1 LEU   183      -2.992  52.064  26.097  1.00 60.30      L31H C
ATOM   4153  CD2 LEU   183      -4.749  52.545  27.815  1.00 63.19      L31H C
ATOM   4154  C   LEU   183      -0.930  54.384  27.044  1.00 65.27      L31H C
ATOM   4155  O   LEU   183      -1.397  55.384  27.587  1.00 66.49      L31H O
ATOM   4156  N   SER   184      -0.439  54.390  25.805  1.00 66.26      L31H N
ATOM   4157  CA  SER   184      -0.326  55.629  25.029  1.00 65.98      L31H C
ATOM   4158  CB  SER   184       0.806  55.524  23.999  1.00 64.96      L31H C
ATOM   4159  OG  SER   184       2.085  55.477  24.613  1.00 60.60      L31H O
ATOM   4160  C   SER   184      -1.611  55.993  24.299  1.00 66.76      L31H C
ATOM   4161  O   SER   184      -2.030  55.295  23.379  1.00 67.45      L31H O
ATOM   4162  N   LEU   185      -2.217  57.104  24.705  1.00 67.44      L31H N
ATOM   4163  CA  LEU   185      -3.396  57.644  24.035  1.00 66.92      L31H C
ATOM   4164  CB  LEU   185      -4.493  57.932  25.054  1.00 65.96      L31H C
ATOM   4165  CG  LEU   185      -5.146  56.727  25.720  1.00 65.79      L31H C
ATOM   4166  CD1 LEU   185      -6.109  57.201  26.794  1.00 65.42      L31H C
ATOM   4167  CD2 LEU   185      -5.871  55.903  24.673  1.00 66.19      L31H C
ATOM   4168  C   LEU   185      -3.103  58.930  23.262  1.00 67.86      L31H C
ATOM   4169  O   LEU   185      -1.968  59.419  23.227  1.00 66.43      L31H O
ATOM   4170  N   THR   186      -4.149  59.461  22.637  1.00 69.39      L31H N
ATOM   4171  CA  THR   186      -4.165  60.833  22.143  1.00 70.50      L31H C
ATOM   4172  CB  THR   186      -4.752  60.912  20.739  1.00 71.20      L31H C
ATOM   4173  OG1 THR   186      -6.127  60.504  20.780  1.00 73.03      L31H O
ATOM   4174  CG2 THR   186      -3.981  60.006  19.792  1.00 70.92      L31H C
ATOM   4175  C   THR   186      -5.093  61.591  23.071  1.00 72.25      L31H C
ATOM   4176  O   THR   186      -6.005  61.002  23.648  1.00 71.28      L31H O
ATOM   4177  N   PRO   187      -4.882  62.907  23.227  1.00 74.63      L31H N
ATOM   4178  CD  PRO   187      -3.868  63.776  22.607  1.00 75.83      L31H C
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ATOM   4179  CA  PRO   187      -5.702  63.639  24.193  1.00 77.83      L31H C
ATOM   4180  CB  PRO   187      -5.257  65.091  24.016  1.00 76.66      L31H C
ATOM   4181  CG  PRO   187      -3.865  64.986  23.509  1.00 75.65      L31H C
ATOM   4182  C   PRO   187      -7.183  63.447  23.912  1.00 81.70      L31H C
ATOM   4183  O   PRO   187      -7.983  63.246  24.828  1.00 82.51      L31H O
ATOM   4184  N   GLU   188      -7.546  63.487  22.638  1.00 86.40      L31H N
ATOM   4185  CA  GLU   188      -8.949  63.405  22.266  1.00 90.69      L31H C
ATOM   4186  CB  GLU   188      -9.095  63.677  20.764  1.00 93.16      L31H C
ATOM   4187  CG  GLU   188      -8.586  65.065  20.335  1.00 96.35      L31H C
ATOM   4188  CD  GLU   188      -7.112  65.069  19.929  1.00 98.21      L31H C
ATOM   4189  OE1 GLU   188      -6.420  66.079  20.197  1.00 98.38      L31H O
ATOM   4190  OE2 GLU   188      -6.648  64.066  19.337  1.00 99.43      L31H O
ATOM   4191  C   GLU   188      -9.540  62.037  22.646  1.00 91.37      L31H C
ATOM   4192  O   GLU   188     -10.648  61.957  23.185  1.00 91.61      L31H O
ATOM   4193  N   GLN   189      -8.790  60.969  22.385  1.00 91.22      L31H N
ATOM   4194  CA  GLN   189      -9.160  59.642  22.872  1.00 90.89      L31H C
ATOM   4195  CB  GLN   189      -8.070  58.625  22.520  1.00 90.99      L31H C
ATOM   4196  CG  GLN   189      -8.070  58.177  21.077  1.00 92.41      L31H C
ATOM   4197  CD  GLN   189      -7.153  56.987  20.842  1.00 94.60      L31H C
ATOM   4198  OE1 GLN   189      -5.963  57.035  21.157  1.00 96.03      L31H O
ATOM   4199  NE2 GLN   189      -7.706  55.910  20.285  1.00 95.79      L31H N
ATOM   4200  C   GLN   189      -9.364  59.655  24.390  1.00 91.43      L31H C
ATOM   4201  O   GLN   189     -10.352  59.129  24.900  1.00 90.47      L31H O
ATOM   4202  N   TRP   190      -8.419  60.263  25.101  1.00 92.68      L31H N
ATOM   4203  CA  TRP   190      -8.422  60.283  26.559  1.00 93.50      L31H C
ATOM   4204  CB  TRP   190      -7.126  60.914  27.068  1.00 89.68      L31H C
ATOM   4205  CG  TRP   190      -7.192  61.346  28.504  1.00 84.95      L31H C
ATOM   4206  CD2 TRP   190      -7.416  60.504  29.642  1.00 81.90      L31H C
ATOM   4207  CE2 TRP   190      -7.386  61.329  30.781  1.00 80.42      L31H C
ATOM   4208  CE3 TRP   190      -7.637  59.132  29.806  1.00 79.74      L31H C
ATOM   4209  CD1 TRP   190      -7.042  62.613  28.988  1.00 82.64      L31H C
ATOM   4210  NE1 TRP   190      -7.157  62.611  30.355  1.00 81.46      L31H N
ATOM   4211  CZ2 TRP   190      -7.570  60.826  32.068  1.00 78.89      L31H C
ATOM   4212  CZ3 TRP   190      -7.818  58.637  31.081  1.00 77.91      L31H C
ATOM   4213  CH2 TRP   190      -7.783  59.482  32.195  1.00 78.15      L31H C
ATOM   4214  C   TRP   190      -9.610  61.045  27.135  1.00 96.42      L31H C
ATOM   4215  O   TRP   190     -10.117  60.709  28.210  1.00 97.82      L31H O
ATOM   4216  N   LYS   191     -10.047  62.077  26.422  1.00 98.25      L31H N
ATOM   4217  CA  LYS   191     -11.203  62.852  26.846  1.00100.49      L31H C
ATOM   4218  CB  LYS   191     -11.041  64.311  26.415  1.00101.18      L31H C
ATOM   4219  CG  LYS   191      -9.788  64.978  26.969  1.00102.90      L31H C
ATOM   4220  CD  LYS   191      -9.867  66.503  26.892  1.00106.93      L31H C
ATOM   4221  CE  LYS   191      -9.818  67.013  25.448  1.00110.65      L31H C
ATOM   4222  NZ  LYS   191      -8.442  67.022  24.860  1.00114.77      L31H N
ATOM   4223  C   LYS   191     -12.477  62.266  26.249  1.00102.09      L31H C
ATOM   4224  O   LYS   191     -13.582  62.683  26.591  1.00101.51      L31H O
ATOM   4225  N   SER   192     -12.306  61.287  25.363  1.00104.72      L31H N
ATOM   4226  CA  SER   192     -13.417  60.682  24.629  1.00106.72      L31H C
ATOM   4227  CB  SER   192     -12.921  60.124  23.295  1.00106.20      L31H C
ATOM   4228  OG  SER   192     -13.778  59.094  22.834  1.00104.28      L31H O
ATOM   4229  C   SER   192     -14.151  59.571  25.381  1.00108.14      L31H C
ATOM   4230  O   SER   192     -15.380  59.490  25.333  1.00109.03      L31H O
ATOM   4231  N   HIS   193     -13.398  58.708  26.057  1.00109.30      L31H N
ATOM   4232  CA  HIS   193     -13.983  57.583  26.780  1.00111.11      L31H C
ATOM   4233  CB  HIS   193     -12.986  56.425  26.830  1.00111.11      L31H C
ATOM   4234  CG  HIS   193     -12.560  55.939  25.476  1.00111.14      L31H C
ATOM   4235  CD2 HIS   193     -12.706  54.734  24.873  1.00111.10      L31H C
ATOM   4236  ND1 HIS   193     -11.882  56.736  24.578  1.00111.45      L31H N
ATOM   4237  CE1 HIS   193     -11.629  56.044  23.480  1.00111.53      L31H C
ATOM   4238  NE2 HIS   193     -12.118  54.826  23.634  1.00111.26      L31H N
ATOM   4239  C   HIS   193     -14.397  57.990  28.195  1.00113.91      L31H C
ATOM   4240  O   HIS   193     -14.072  59.088  28.655  1.00111.98      L31H O
ATOM   4241  N   ARG   194     -15.127  57.112  28.878  1.00118.43      L31H N
ATOM   4242  CA  ARG   194     -15.711  57.466  30.168  1.00123.44      L31H C
ATOM   4243  CB  ARG   194     -16.983  56.645  30.416  1.00125.26      L31H C
ATOM   4244  CG  ARG   194     -18.237  57.237  29.774  1.00128.96      L31H C
ATOM   4245  CD  ARG   194     -18.480  58.659  30.274  1.00132.25      L31H C
ATOM   4246  NE  ARG   194     -19.711  59.247  29.752  1.00136.13      L31H N
ATOM   4247  CZ  ARG   194     -20.074  60.510  29.952  1.00138.35      L31H C
ATOM   4248  NH1 ARG   194     -21.209  60.967  29.442  1.00140.09      L31H N
ATOM   4249  NH2 ARG   194     -19.300  61.319  30.662  1.00140.23      L31H N
ATOM   4250  C   ARG   194     -14.728  57.273  31.315  1.00124.67      L31H C
ATOM   4251  O   ARG   194     -14.760  58.008  32.304  1.00126.55      L31H O
ATOM   4252  N   SER   195     -13.850  56.287  31.169  1.00124.75      L31H N
ATOM   4253  CA  SER   195     -12.792  56.039  32.144  1.00123.68      L31H C
ATOM   4254  CB  SER   195     -13.382  55.629  33.485  1.00124.49      L31H C
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ATOM   4255  OG  SER   195     -13.668  54.242  33.477  1.00123.08      L31H O
ATOM   4256  C   SER   195     -11.930  54.900  31.638  1.00122.61      L31H C
ATOM   4257  O   SER   195     -12.385  54.081  30.847  1.00121.79      L31H O
ATOM   4258  N   TYR   196     -10.690  54.840  32.105  1.00122.31      L31H N
ATOM   4259  CA  TYR   196      -9.808  53.740  31.740  1.00122.26      L31H C
ATOM   4260  CB  TYR   196      -8.525  54.277  31.096  1.00126.23      L31H C
ATOM   4261  CG  TYR   196      -8.693  54.755  29.663  1.00130.75      L31H C
ATOM   4262  CD1 TYR   196      -8.219  53.997  28.596  1.00132.15      L31H C
ATOM   4263  CE1 TYR   196      -8.356  54.434  27.290  1.00134.17      L31H C
ATOM   4264  CD2 TYR   196      -9.316  55.968  29.378  1.00132.83      L31H C
ATOM   4265  CE2 TYR   196      -9.457  56.411  28.073  1.00134.67      L31H C
ATOM   4266  CZ  TYR   196      -8.974  55.641  27.036  1.00134.93      L31H C
ATOM   4267  OH  TYR   196      -9.100  56.086  25.742  1.00136.58      L31H O
ATOM   4268  C   TYR   196      -9.463  52.899  32.957  1.00119.64      L31H C
ATOM   4269  O   TYR   196      -9.385  53.410  34.073  1.00119.26      L31H O
ATOM   4270  N   SER   197      -9.265  51.604  32.735  1.00116.33      L31H N
ATOM   4271  CA  SER   197      -8.875  50.705  33.812  1.00112.39      L31H C
ATOM   4272  CB  SER   197     -10.025  49.765  34.160  1.00112.14      L31H C
ATOM   4273  OG  SER   197     -11.131  50.498  34.647  1.00111.27      L31H O
ATOM   4274  C   SER   197      -7.650  49.882  33.461  1.00109.10      L31H C
ATOM   4275  O   SER   197      -7.510  49.400  32.337  1.00110.35      L31H O
ATOM   4276  N   CYS   198      -6.763  49.728  34.437  1.00103.72      L31H N
ATOM   4277  CA  CYS   198      -5.640  48.814  34.309  1.00 98.46      L31H C
ATOM   4278  C   CYS   198      -5.983  47.497  35.017  1.00 98.24      L31H C
ATOM   4279  O   CYS   198      -6.588  47.506  36.093  1.00 96.63      L31H O
ATOM   4280  CB  CYS   198      -4.387  49.441  34.923  1.00 94.19      L31H C
ATOM   4281  SG  CYS   198      -2.880  48.471  34.620  1.00 88.73      L31H S
ATOM   4282  N   GLN   199      -5.613  46.368  34.412  1.00 98.30      L31H N
ATOM   4283  CA  GLN   199      -5.964  45.059  34.964  1.00 98.37      L31H C
ATOM   4284  CB  GLN   199      -7.214  44.521  34.279  1.00 97.13      L31H C
ATOM   4285  CG  GLN   199      -8.459  45.312  34.584  1.00 95.47      L31H C
ATOM   4286  CD  GLN   199      -9.671  44.731  33.914  1.00 93.77      L31H C
ATOM   4287  OE1 GLN   199      -9.569  43.761  33.165  1.00 91.94      L31H O
ATOM   4288  NE2 GLN   199     -10.831  45.320  34.176  1.00 93.03      L31H N
ATOM   4289  C   GLN   199      -4.852  44.027  34.845  1.00 99.27      L31H C
ATOM   4290  O   GLN   199      -4.604  43.481  33.766  1.00 99.69      L31H O
ATOM   4291  N   VAL   200      -4.197  43.748  35.967  1.00 99.34      L31H N
ATOM   4292  CA  VAL   200      -3.076  42.820  35.983  1.00 99.87      L31H C
ATOM   4293  CB  VAL   200      -1.931  43.346  36.881  1.00101.07      L31H C
ATOM   4294  CG1 VAL   200      -0.764  42.369  36.866  1.00100.65      L31H C
ATOM   4295  CG2 VAL   200      -1.484  44.716  36.398  1.00101.41      L31H C
ATOM   4296  C   VAL   200      -3.496  41.434  36.467  1.00 99.94      L31H C
ATOM   4297  O   VAL   200      -4.264  41.295  37.418  1.00 98.21      L31H O
ATOM   4298  N   THR   201      -2.984  40.410  35.798  1.00101.27      L31H N
ATOM   4299  CA  THR   201      -3.321  39.039  36.125  1.00103.26      L31H C
ATOM   4300  CB  THR   201      -3.668  38.261  34.848  1.00103.65      L31H C
ATOM   4301  OG1 THR   201      -4.591  39.028  34.060  1.00105.27      L31H O
ATOM   4302  CG2 THR   201      -4.292  36.918  35.195  1.00104.43      L31H C
ATOM   4303  C   THR   201      -2.121  38.383  36.808  1.00105.17      L31H C
ATOM   4304  O   THR   201      -1.079  38.181  36.185  1.00104.71      L31H O
ATOM   4305  N   HIS   202      -2.265  38.070  38.094  1.00107.14      L31H N
ATOM   4306  CA  HIS   202      -1.243  37.316  38.819  1.00109.43      L31H C
ATOM   4307  CB  HIS   202      -0.565  38.188  39.877  1.00107.76      L31H C
ATOM   4308  CG  HIS   202       0.532  37.488  40.622  1.00105.81      L31H C
ATOM   4309  CD2 HIS   202       1.730  37.012  40.206  1.00104.55      L31H C
ATOM   4310  ND1 HIS   202       0.460  37.210  41.970  1.00104.95      L31H N
ATOM   4311  CE1 HIS   202       1.566  36.595  42.352  1.00104.13      L31H C
ATOM   4312  NE2 HIS   202       2.353  36.464  41.300  1.00103.58      L31H N
ATOM   4313  C   HIS   202      -1.856  36.104  39.500  1.00112.26      L31H C
ATOM   4314  O   HIS   202      -2.775  36.239  40.307  1.00112.96      L31H O
ATOM   4315  N   GLU   203      -1.337  34.924  39.172  1.00115.35      L31H N
ATOM   4316  CA  GLU   203      -1.795  33.681  39.780  1.00117.88      L31H C
ATOM   4317  CB  GLU   203      -1.393  33.627  41.258  1.00119.01      L31H C
ATOM   4318  CG  GLU   203       0.065  33.274  41.501  1.00120.93      L31H C
ATOM   4319  CD  GLU   203       0.423  31.886  40.997  1.00122.12      L31H C
ATOM   4320  OE1 GLU   203       0.839  31.036  41.814  1.00122.96      L31H O
ATOM   4321  OE2 GLU   203       0.288  31.641  39.780  1.00122.34      L31H O
ATOM   4322  C   GLU   203      -3.302  33.509  39.658  1.00118.66      L31H C
ATOM   4323  O   GLU   203      -3.943  32.972  40.561  1.00119.67      L31H O
ATOM   4324  N   GLY   203      -3.866  33.967  38.543  1.00118.23      L31H N
ATOM   4325  CA  GLY   203      -5.292  33.802  38.312  1.00116.73      L31H C
ATOM   4326  C   GLY   203      -6.158  34.822  39.031  1.00116.04      L31H C
ATOM   4327  O   GLY   203      -7.383  34.772  38.938  1.00115.24      L31H O
ATOM   4328  N   SER   205      -5.522  35.741  39.755  1.00116.14      L31H N
ATOM   4329  CA  SER   205      -6.219  36.869  40.372  1.00116.01      L31H C
ATOM   4330  CB  SER   205      -5.801  37.024  41.837  1.00115.22      L31H C
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ATOM   4331  OG  SER   205      -6.212  35.913  42.612  1.00112.64      L31H O
ATOM   4332  C   SER   205      -5.890  38.153  39.623  1.00115.80      L31H C
ATOM   4333  O   SER   205      -4.725  38.435  39.347  1.00116.83      L31H O
ATOM   4334  N   THR   206      -6.920  38.930  39.299  1.00114.25      L31H N
ATOM   4335  CA  THR   206      -6.726  40.193  38.598  1.00111.42      L31H C
ATOM   4336  CB  THR   206      -7.560  40.258  37.306  1.00109.53      L31H C
ATOM   4337  OG1 THR   206      -7.060  39.302  36.364  1.00105.70      L31H O
ATOM   4338  CG2 THR   206      -7.481  41.646  36.694  1.00107.19      L31H C
ATOM   4339  C   THR   206      -7.062  41.408  39.447  1.00110.26      L31H C
ATOM   4340  O   THR   206      -8.218  41.640  39.801  1.00110.98      L31H O
ATOM   4341  N   VAL   207      -6.031  42.182  39.765  1.00108.60      L31H N
ATOM   4342  CA  VAL   207      -6.202  43.479  40.402  1.00107.27      L31H C
ATOM   4343  CB  VAL   207      -4.883  43.963  41.054  1.00106.79      L31H C
ATOM   4344  CG1 VAL   207      -5.067  45.355  41.615  1.00106.40      L31H C
ATOM   4345  CG2 VAL   207      -4.455  43.010  42.157  1.00105.72      L31H C
ATOM   4346  C   VAL   207      -6.606  44.480  39.331  1.00106.10      L31H C
ATOM   4347  O   VAL   207      -6.032  44.488  38.242  1.00105.64      L31H O
ATOM   4348  N   GLU   208      -7.595  45.315  39.638  1.00105.37      L31H N
ATOM   4349  CA  GLU   208      -8.014  46.370  38.721  1.00104.39      L31H C
ATOM   4350  CB  GLU   208      -9.452  46.134  38.250  1.00104.64      L31H C
ATOM   4351  CG  GLU   208      -9.922  47.115  37.182  1.00106.41      L31H C
ATOM   4352  CD  GLU   208     -11.408  47.442  37.281  1.00107.65      L31H C
ATOM   4353  OE1 GLU   208     -12.221  46.736  36.646  1.00108.81      L31H O
ATOM   4354  OE2 GLU   208     -11.758  48.411  37.990  1.00107.97      L31H O
ATOM   4355  C   GLU   208      -7.915  47.733  39.397  1.00103.40      L31H C
ATOM   4356  O   GLU   208      -8.078  47.843  40.611  1.00103.44      L31H O
ATOM   4357  N   LYS   209      -7.632  48.760  38.599  1.00102.70      L31H N
ATOM   4358  CA  LYS   209      -7.599  50.146  39.064  1.00102.80      L31H C
ATOM   4359  CB  LYS   209      -6.167  50.550  39.443  1.00101.95      L31H C
ATOM   4360  CG  LYS   209      -5.551  49.745  40.587  1.00 99.94      L31H C
ATOM   4361  CD  LYS   209      -5.467  50.558  41.876  1.00 98.45      L31H C
ATOM   4362  CE  LYS   209      -5.392  49.647  43.096  1.00 98.07      L31H C
ATOM   4363  NZ  LYS   209      -4.863  50.344  44.300  1.00 97.51      L31H N
ATOM   4364  C   LYS   209      -8.099  51.040  37.932  1.00103.44      L31H C
ATOM   4365  O   LYS   209      -7.729  50.839  36.776  1.00103.27      L31H O
ATOM   4366  N   THR   210      -8.935  52.022  38.258  1.00104.82      L31H N
ATOM   4367  CA  THR   210      -9.552  52.865  37.234  1.00106.53      L31H C
ATOM   4368  CB  THR   210     -11.077  52.683  37.218  1.00104.13      L31H C
ATOM   4369  OG1 THR   210     -11.391  51.309  36.967  1.00101.83      L31H O
ATOM   4370  CG2 THR   210     -11.706  53.554  36.143  1.00102.17      L31H C
ATOM   4371  C   THR   210      -9.263  54.355  37.411  1.00108.67      L31H C
ATOM   4372  O   THR   210      -9.142  54.841  38.535  1.00110.86      L31H O
ATOM   4373  N   VAL   211      -9.161  55.076  36.295  1.00109.56      L31H N
ATOM   4374  CA  VAL   211      -9.075  56.539  36.314  1.00109.07      L31H C
ATOM   4375  CB  VAL   211      -7.650  57.027  35.925  1.00108.56      L31H C
ATOM   4376  CG1 VAL   211      -6.654  56.676  37.022  1.00106.89      L31H C
ATOM   4377  CG2 VAL   211      -7.220  56.385  34.614  1.00107.30      L31H C
ATOM   4378  C   VAL   211     -10.099  57.171  35.360  1.00109.17      L31H C
ATOM   4379  O   VAL   211     -10.532  56.537  34.393  1.00108.84      L31H O
ATOM   4380  N   ALA   212     -10.489  58.415  35.639  1.00110.64      L31H N
ATOM   4381  CA  ALA   212     -11.443  59.126  34.786  1.00113.75      L31H C
ATOM   4382  CB  ALA   212     -12.842  59.003  35.359  1.00114.93      L31H C
ATOM   4383  C   ALA   212     -11.085  60.598  34.611  1.00115.04      L31H C
ATOM   4384  O   ALA   212     -10.995  61.344  35.583  1.00114.62      L31H O
ATOM   4385  N   PRO   213     -10.905  61.036  33.353  1.00115.69      L31H N
ATOM   4386  CD  PRO   213     -11.212  60.200  32.179  1.00111.97      L31H C
ATOM   4387  CA  PRO   213     -10.408  62.364  32.964  1.00117.21      L31H C
ATOM   4388  CB  PRO   213     -10.372  62.312  31.434  1.00113.00      L31H C
ATOM   4389  CG  PRO   213     -11.269  61.194  31.055  1.00111.14      L31H C
ATOM   4390  C   PRO   213     -11.198  63.570  33.459  1.00119.54      L31H C
ATOM   4391  O   PRO   213     -10.971  64.686  32.998  1.00121.28      L31H O
ATOM   4392  N   THR   214     -12.116  63.356  34.395  1.00120.41      L31H N
ATOM   4393  CA  THR   214     -12.907  64.459  34.933  1.00120.39      L31H C
ATOM   4394  CB  THR   214     -14.039  63.943  35.857  1.00121.60      L31H C
ATOM   4395  OG1 THR   214     -14.770  62.911  35.184  1.00119.92      L31H O
ATOM   4396  CG2 THR   214     -15.005  65.073  36.207  1.00119.36      L31H C
ATOM   4397  C   THR   214     -12.003  65.407  35.725  1.00119.41      L31H C
ATOM   4398  O   THR   214     -11.989  66.621  35.410  1.00121.23      L31H O
ATOM   4399  OXT THR   214     -11.314  64.922  36.649  1.00120.59      L31H O
TER    4400       THR   214                                             L31H
ATOM   4401  CB  GLU     1      36.818  24.019  27.876  1.00 91.51      H31H C
ATOM   4402  CG  GLU     1      36.442  25.509  27.850  1.00 97.41      H31H C
ATOM   4403  CD  GLU     1      35.215  25.841  28.707  1.00100.73      H31H C
ATOM   4404  OE1 GLU     1      35.228  26.889  29.392  1.00102.86      H31H O
ATOM   4405  OE2 GLU     1      34.237  25.061  28.693  1.00102.54      H31H O
ATOM   4406  C   GLU     1      36.959  23.770  25.393  1.00 84.82      H31H C
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ATOM   4407  O   GLU     1      37.515  24.326  24.446  1.00 85.09      H31H O
ATOM   4408  N   GLU     1      38.978  24.294  26.678  1.00 88.13      H31H N
ATOM   4409  CA  GLU     1      37.693  23.546  26.704  1.00 87.70      H31H C
ATOM   4410  N   VAL     2      35.705  23.337  25.343  1.00 80.58      H31H N
ATOM   4411  CA  VAL     2      34.873  23.538  24.168  1.00 75.75      H31H C
ATOM   4412  CB  VAL     2      33.865  22.405  24.026  1.00 74.92      H31H C
ATOM   4413  CG1 VAL     2      33.140  22.534  22.704  1.00 73.70      H31H C
ATOM   4414  CG2 VAL     2      34.575  21.067  24.147  1.00 74.46      H31H C
ATOM   4415  C   VAL     2      34.112  24.859  24.255  1.00 72.89      H31H C
ATOM   4416  O   VAL     2      33.272  25.045  25.136  1.00 71.91      H31H O
ATOM   4417  N   GLN     3      34.401  25.767  23.327  1.00 68.98      H31H N
ATOM   4418  CA  GLN     3      33.936  27.139  23.439  1.00 63.56      H31H C
ATOM   4419  CB  GLN     3      35.091  28.014  23.915  1.00 64.18      H31H C
ATOM   4420  CG  GLN     3      34.683  29.323  24.562  1.00 64.34      H31H C
ATOM   4421  CD  GLN     3      35.868  30.013  25.193  1.00 64.70      H31H C
ATOM   4422  OE1 GLN     3      35.795  31.180  25.602  1.00 64.94      H31H O
ATOM   4423  NE2 GLN     3      36.980  29.292  25.276  1.00 64.00      H31H N
ATOM   4424  C   GLN     3      33.375  27.689  22.131  1.00 59.78      H31H C
ATOM   4425  O   GLN     3      33.905  27.416  21.051  1.00 59.58      H31H O
ATOM   4426  N   LEU     4      32.297  28.465  22.244  1.00 55.16      H31H N
ATOM   4427  CA  LEU     4      31.736  29.217  21.122  1.00 51.64      H31H C
ATOM   4428  CB  LEU     4      30.289  28.797  20.884  1.00 48.66      H31H C
ATOM   4429  CG  LEU     4      30.063  27.411  20.293  1.00 46.75      H31H C
ATOM   4430  CD1 LEU     4      28.572  27.169  20.180  1.00 47.44      H31H C
ATOM   4431  CD2 LEU     4      30.716  27.303  18.927  1.00 45.40      H31H C
ATOM   4432  C   LEU     4      31.768  30.694  21.485  1.00 51.24      H31H C
ATOM   4433  O   LEU     4      31.480  31.040  22.627  1.00 51.53      H31H O
ATOM   4434  N   VAL     5      32.112  31.571  20.543  1.00 51.07      H31H N
ATOM   4435  CA  VAL     5      32.099  33.009  20.843  1.00 52.18      H31H C
ATOM   4436  CB  VAL     5      33.505  33.560  21.180  1.00 50.09      H31H C
ATOM   4437  CG1 VAL     5      33.387  35.028  21.543  1.00 49.53      H31H C
ATOM   4438  CG2 VAL     5      34.141  32.794  22.322  1.00 49.00      H31H C
ATOM   4439  C   VAL     5      31.563  33.882  19.713  1.00 53.87      H31H C
ATOM   4440  O   VAL     5      32.284  34.195  18.766  1.00 55.08      H31H O
ATOM   4441  N   GLU     6      30.311  34.306  19.819  1.00 54.66      H31H N
ATOM   4442  CA  GLU     6      29.732  35.132  18.770  1.00 56.37      H31H C
ATOM   4443  CB  GLU     6      28.226  34.881  18.665  1.00 54.99      H31H C
ATOM   4444  CG  GLU     6      27.495  34.976  19.987  1.00 54.97      H31H C
ATOM   4445  CD  GLU     6      27.518  33.665  20.770  1.00 55.38      H31H C
ATOM   4446  OE1 GLU     6      28.549  33.383  21.431  1.00 53.88      H31H O
ATOM   4447  OE2 GLU     6      26.500  32.925  20.723  1.00 53.41      H31H O
ATOM   4448  C   GLU     6      29.998  36.613  19.010  1.00 57.61      H31H C
ATOM   4449  O   GLU     6      30.002  37.071  20.156  1.00 59.58      H31H O
ATOM   4450  N   SER     7      30.225  37.355  17.926  1.00 57.59      H31H N
ATOM   4451  CA  SER     7      30.437  38.799  18.006  1.00 56.93      H31H C
ATOM   4452  CB  SER     7      31.906  39.125  17.764  1.00 55.14      H31H C
ATOM   4453  OG  SER     7      32.269  38.770  16.441  1.00 54.54      H31H O
ATOM   4454  C   SER     7      29.589  39.533  16.969  1.00 57.75      H31H C
ATOM   4455  O   SER     7      28.690  38.947  16.347  1.00 58.75      H31H O
ATOM   4456  N   GLY     8      29.876  40.820  16.792  1.00 57.04      H31H N
ATOM   4457  CA  GLY     8      29.352  41.535  15.643  1.00 57.05      H31H C
ATOM   4458  C   GLY     8      28.048  42.264  15.900  1.00 57.40      H31H C
ATOM   4459  O   GLY     8      27.650  43.126  15.110  1.00 57.11      H31H O
ATOM   4460  N   GLY     9      27.384  41.923  17.002  1.00 57.05      H31H N
ATOM   4461  CA  GLY     9      26.120  42.558  17.332  1.00 57.07      H31H C
ATOM   4462  C   GLY     9      26.265  44.057  17.523  1.00 57.42      H31H C
ATOM   4463  O   GLY     9      27.372  44.593  17.456  1.00 57.35      H31H O
ATOM   4464  N   GLY    10      25.145  44.737  17.757  1.00 57.20      H31H N
ATOM   4465  CA  GLY    10      25.175  46.177  17.926  1.00 57.17      H31H C
ATOM   4466  C   GLY    10      23.875  46.876  17.566  1.00 58.48      H31H C
ATOM   4467  O   GLY    10      22.830  46.243  17.363  1.00 57.46      H31H O
ATOM   4468  N   LEU    11      23.948  48.204  17.494  1.00 59.75      H31H N
ATOM   4469  CA  LEU    11      22.814  49.044  17.119  1.00 59.30      H31H C
ATOM   4470  CB  LEU    11      22.908  50.378  17.860  1.00 61.04      H31H C
ATOM   4471  CG  LEU    11      21.886  51.491  17.591  1.00 63.37      H31H C
ATOM   4472  CD1 LEU    11      20.477  51.090  18.065  1.00 60.92      H31H C
ATOM   4473  CD2 LEU    11      22.372  52.757  18.308  1.00 63.68      H31H C
ATOM   4474  C   LEU    11      22.830  49.274  15.606  1.00 59.16      H31H C
ATOM   4475  O   LEU    11      23.904  49.326  14.995  1.00 58.55      H31H O
ATOM   4476  N   VAL    12      21.640  49.399  15.013  1.00 57.89      H31H N
ATOM   4477  CA  VAL    12      21.489  49.473  13.560  1.00 57.68      H31H C
ATOM   4478  CB  VAL    12      21.935  48.151  12.891  1.00 58.73      H31H C
ATOM   4479  CG1 VAL    12      21.083  47.863  11.667  1.00 57.50      H31H C
ATOM   4480  CG2 VAL    12      23.416  48.249  12.488  1.00 58.66      H31H C
ATOM   4481  C   VAL    12      20.056  49.780  13.134  1.00 57.57      H31H C
ATOM   4482  O   VAL    12      19.106  49.170  13.624  1.00 57.48      H31H O
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ATOM   4483  N   LYS  13      19.905  50.725  12.212  1.00 56.16      H31H N
ATOM   4484  CA  LYS  13      18.583  51.217  11.835  1.00 54.93      H31H C
ATOM   4485  CB  LYS  13      18.701  52.571  11.111  1.00 57.48      H31H C
ATOM   4486  CG  LYS  13      19.294  53.705  11.951  1.00 58.72      H31H C
ATOM   4487  CD  LYS  13      19.230  55.040  11.220  0.50 60.60      H31H C
ATOM   4488  CE  LYS  13      17.828  55.638  11.249  1.00 61.98      H31H C
ATOM   4489  NZ  LYS  13      16.837  54.802  10.504  1.00 65.29      H31H N
ATOM   4490  C   LYS  13      17.846  50.237  10.938  1.00 52.27      H31H C
ATOM   4491  O   LYS  13      18.456  49.409  10.276  1.00 51.72      H31H O
ATOM   4492  N   PRO  14      16.513  50.335  10.888  1.00 51.07      H31H N
ATOM   4493  CD  PRO  14      15.629  51.184  11.701  1.00 50.36      H31H C
ATOM   4494  CA  PRO  14      15.756  49.463   9.981  1.00 51.56      H31H C
ATOM   4495  CB  PRO  14      14.315  49.950  10.136  1.00 49.93      H31H C
ATOM   4496  CG  PRO  14      14.283  50.547  11.491  1.00 50.40      H31H C
ATOM   4497  C.  PRO  14      16.245  49.535   8.526  1.00 52.20      H31H C
ATOM   4498  O   PRO  14      16.571  50.616   8.016  1.00 51.66      H31H O
ATOM   4499  N   GLY  15      16.293  48.373   7.871  1.00 53.10      H31H N
ATOM   4500  CA  GLY  15      16.747  48.295   6.493  1.00 53.00      H31H C
ATOM   4501  C   GLY  15      18.237  48.032   6.398  1.00 54.02      H31H C
ATOM   4502  O   GLY  15      18.736  47.583   5.368  1.00 55.51      H31H O
ATOM   4503  N   GLY  16      18.959  48.310   7.477  1.00 53.44      H31H N
ATOM   4504  CA  GLY  16      20.401  48.146   7.455  1.00 52.71      H31H C
ATOM   4505  C   GLY  16      20.827  46.695   7.437  1.00 53.74      H31H C
ATOM   4506  O   GLY  16      20.030  45.795   7.131  1.00 53.76      H31H O
ATOM   4507  N   SER  17      22.088  46.456   7.781  1.00 53.93      H31H N
ATOM   4508  CA  SER  17      22.700  45.171   7.494  1.00 52.93      H31H C
ATOM   4509  CB  SER  17      23.081  45.114   6.008  1.00 51.53      H31H C
ATOM   4510  OG  SER  17      21.949  45.342   5.180  1.00 49.99      H31H O
ATOM   4511  C   SER  17      23.919  44.885   8.363  1.00 53.75      H31H C
ATOM   4512  O   SER  17      25.036  45.301   8.051  1.00 54.05      H31H O
ATOM   4513  N   LEU  18      23.694  44.154   9.451  1.00 54.07      H31H N
ATOM   4514  CA  LEU  18      24.773  43.741  10.346  1.00 52.61      H31H C
ATOM   4515  CB  LEU  18      24.274  43.776  11.799  1.00 53.51      H31H C
ATOM   4516  CG  LEU  18      25.328  43.451  12.864  1.00 55.27      H31H C
ATOM   4517  CD1 LEU  18      26.373  44.567  12.903  1.00 54.03      H31H C
ATOM   4518  CD2 LEU  18      24.658  43.258  14.229  1.00 53.34      H31H C
ATOM   4519  C   LEU  18      25.255  42.329   9.977  1.00 50.58      H31H C
ATOM   4520  O   LEU  18      24.562  41.596   9.269  1.00 50.59      H31H O
ATOM   4521  N   ARG  19      26.440  41.948  10.447  1.00 47.55      H31H N
ATOM   4522  CA  ARG  19      26.975  40.621  10.144  1.00 45.24      H31H C
ATOM   4523  CB  ARG  19      27.973  40.697   8.998  1.00 44.78      H31H C
ATOM   4524  CG  ARG  19      28.777  39.417   8.827  1.00 46.47      H31H C
ATOM   4525  CD  ARG  19      29.711  39.545   7.655  1.00 46.31      H31H C
ATOM   4526  NE  ARG  19      30.114  38.261   7.109  1.00 47.93      H31H N
ATOM   4527  CZ  ARG  19      31.321  37.743   7.278  1.00 50.43      H31H C
ATOM   4528  NH1 ARG  19      31.630  36.560   6.743  1.00 48.32      H31H N
ATOM   4529  NH2 ARG  19      32.217  38.420   7.992  1.00 50.58      H31H N
ATOM   4530  C   ARG  19      27.646  39.908  11.312  1.00 43.40      H31H C
ATOM   4531  O   ARG  19      28.622  40.399  11.881  1.00 43.30      H31H O
ATOM   4532  N   LEU  20      27.141  38.722  11.630  1.00 41.57      H31H N
ATOM   4533  CA  LEU  20      27.496  38.040  12.866  1.00 40.63      H31H C
ATOM   4534  CB  LEU  20      26.259  37.394  13.482  1.00 38.45      H31H C
ATOM   4535  CG  LEU  20      25.242  38.429  13.925  1.00 37.41      H31H C
ATOM   4536  CD1 LEU  20      24.000  37.758  14.531  1.00 35.80      H31H C
ATOM   4537  CD2 LEU  20      25.945  39.365  14.911  1.00 34.57      H31H C
ATOM   4538  C   LEU  20      28.553  36.988  12.664  1.00 40.56      H31H C
ATOM   4539  O   LEU  20      28.522  36.244  11.696  1.00 41.52      H31H O
ATOM   4540  N   SER  21      29.489  36.932  13.597  1.00 42.24      H31H N
ATOM   4541  CA  SER  21      30.476  35.874  13.614  1.00 44.84      H31H C
ATOM   4542  CB  SER  21      31.877  36.454  13.484  1.00 45.20      H31H C
ATOM   4543  OG  SER  21      32.052  37.046  12.210  1.00 45.61      H31H O
ATOM   4544  C   SER  21      30.361  35.102  14.913  1.00 46.37      H31H C
ATOM   4545  O   SER  21      29.816  35.616  15.897  1.00 48.51      H31H O
ATOM   4546  N   CYS  22      30.872  33.874  14.902  1.00 45.31      H31H N
ATOM   4547  CA  CYS  22      30.833  32.997  16.053  1.00 45.48      H31H C
ATOM   4548  C   CYS  22      32.020  32.044  15.972  1.00 45.47      H31H C
ATOM   4549  O   CYS  22      32.082  31.197  15.081  1.00 45.24      H31H O
ATOM   4550  CB  CYS  22      29.529  32.211  16.053  1.00 46.72      H31H C
ATOM   4551  SG  CYS  22      29.593  30.638  16.967  1.00 52.03      H31H S
ATOM   4552  N   ALA  23      32.962  32.195  16.903  1.00 45.04      H31H N
ATOM   4553  CA  ALA  23      34.255  31.520  16.821  1.00 45.19      H31H C
ATOM   4554  CB  ALA  23      35.374  32.514  17.065  1.00 43.20      H31H C
ATOM   4555  C   ALA  23      34.367  30.360  17.806  1.00 45.82      H31H C
ATOM   4556  O   ALA  23      34.373  30.561  19.023  1.00 47.17      H31H O
ATOM   4557  N   ALA  24      34.473  29.147  17.272  1.00 44.91      H31H N
ATOM   4558  CA  ALA  24      34.486  27.953  18.098  1.00 44.44      H31H C
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ATOM	4559	CB	ALA	24	33.590	26.910	17.502	1.00	45.51	H31H C
ATOM	4560	C	ALA	24	35.881	27.398	18.230	1.00	44.69	H31H C
ATOM	4561	O	ALA	24	36.701	27.533	17.323	1.00	44.96	H31H O
ATOM	4562	N	SER	25	36.137	26.754	19.362	1.00	44.80	H31H N
ATOM	4563	CA	SER	25	37.454	26.204	19.654	1.00	44.29	H31H C
ATOM	4564	CB	SER	25	38.327	27.287	20.285	1.00	44.22	H31H C
ATOM	4565	OG	SER	25	37.541	28.248	20.983	1.00	44.39	H31H O
ATOM	4566	C	SER	25	37.366	24.994	20.580	1.00	44.72	H31H C
ATOM	4567	O	SER	25	36.397	24.823	21.322	1.00	44.63	H31H O
ATOM	4568	N	GLY	26	38.384	24.145	20.526	1.00	44.89	H31H N
ATOM	4569	CA	GLY	26	38.428	23.012	21.430	1.00	44.97	H31H C
ATOM	4570	C	GLY	26	37.508	21.877	21.024	1.00	44.73	H31H C
ATOM	4571	O	GLY	26	37.004	21.145	21.872	1.00	45.24	H31H O
ATOM	4572	N	PHE	27	37.280	21.732	19.725	1.00	44.04	H31H N
ATOM	4573	CA	PHE	27	36.499	20.615	19.220	1.00	42.33	H31H C
ATOM	4574	CB	PHE	27	35.074	20.703	19.739	1.00	39.84	H31H C
ATOM	4575	CG	PHE	27	34.256	21.745	19.078	1.00	38.30	H31H C
ATOM	4576	CD1	PHE	27	34.255	23.037	19.549	1.00	38.44	H31H C
ATOM	4577	CD2	PHE	27	33.405	21.411	18.038	1.00	39.02	H31H C
ATOM	4578	CE1	PHE	27	33.402	23.985	18.999	1.00	38.76	H31H C
ATOM	4579	CE2	PHE	27	32.553	22.352	17.484	1.00	39.23	H31H C
ATOM	4580	CZ	PHE	27	32.549	23.638	17.968	1.00	38.31	H31H C
ATOM	4581	C	PHE	27	36.495	20.575	17.697	1.00	42.00	H31H C
ATOM	4582	O	PHE	27	36.708	21.596	17.042	1.00	44.48	H31H O
ATOM	4583	N	THR	28	36.266	19.398	17.131	1.00	39.42	H31H N
ATOM	4584	CA	THR	28	36.311	19.263	15.692	1.00	40.18	H31H C
ATOM	4585	CB	THR	28	36.369	17.775	15.307	1.00	40.22	H31H C
ATOM	4586	OG1	THR	28	35.447	17.047	16.120	1.00	43.67	H31H O
ATOM	4587	CG2	THR	28	37.764	17.211	15.536	1.00	39.15	H31H C
ATOM	4588	C	THR	28	35.125	19.972	15.010	1.00	40.83	H31H C
ATOM	4589	O	THR	28	34.120	19.360	14.642	1.00	41.68	H31H O
ATOM	4590	N	PHE	29	35.271	21.282	14.844	1.00	39.15	H31H N
ATOM	4591	CA	PHE	29	34.258	22.129	14.237	1.00	36.37	H31H C
ATOM	4592	CB	PHE	29	34.820	23.537	14.064	1.00	34.08	H31H C
ATOM	4593	CG	PHE	29	33.869	24.504	13.420	1.00	32.57	H31H C
ATOM	4594	CD1	PHE	29	32.871	25.108	14.161	1.00	32.26	H31H C
ATOM	4595	CD2	PHE	29	34.033	24.877	12.098	1.00	31.00	H31H C
ATOM	4596	CE1	PHE	29	32.055	26.081	13.595	1.00	33.72	H31H C
ATOM	4597	CE2	PHE	29	33.229	25.842	11.523	1.00	30.04	H31H C
ATOM	4598	CZ	PHE	29	32.238	26.451	12.269	1.00	32.68	H31H C
ATOM	4599	C	PHE	29	33.802	21.606	12.891	1.00	35.94	H31H C
ATOM	4600	O	PHE	29	32.664	21.837	12.489	1.00	37.05	H31H O
ATOM	4601	N	SER	30	34.689	20.919	12.185	1.00	34.97	H31H N
ATOM	4602	CA	SER	30	34.351	20.421	10.866	1.00	37.04	H31H C
ATOM	4603	CB	SER	30	35.615	20.115	10.079	1.00	38.55	H31H C
ATOM	4604	OG	SER	30	36.576	21.137	10.284	1.00	45.91	H31H O
ATOM	4605	C	SER	30	33.495	19.163	10.995	1.00	38.11	H31H C
ATOM	4606	O	SER	30	33.013	18.611	10.000	1.00	40.04	H31H O
ATOM	4607	N	SER	31	33.285	18.718	12.226	1.00	37.14	H31H N
ATOM	4608	CA	SER	31	32.404	17.589	12.449	1.00	37.25	H31H C
ATOM	4609	CB	SER	31	33.079	16.573	13.379	1.00	39.60	H31H C
ATOM	4610	OG	SER	31	34.428	16.335	12.995	1.00	41.49	H31H O
ATOM	4611	C	SER	31	31.043	17.997	13.021	1.00	36.03	H31H C
ATOM	4612	O	SER	31	30.155	17.156	13.164	1.00	36.13	H31H O
ATOM	4613	N	TYR	32	30.863	19.271	13.350	1.00	34.15	H31H N
ATOM	4614	CA	TYR	32	29.593	19.683	13.924	1.00	33.10	H31H C
ATOM	4615	CB	TYR	32	29.824	20.398	15.257	1.00	32.49	H31H C
ATOM	4616	CG	TYR	32	30.191	19.432	16.369	1.00	33.31	H31H C
ATOM	4617	CD1	TYR	32	31.384	18.741	16.336	1.00	32.16	H31H C
ATOM	4618	CE1	TYR	32	31.691	17.817	17.293	1.00	34.34	H31H C
ATOM	4619	CD2	TYR	32	29.313	19.168	17.410	1.00	32.93	H31H C
ATOM	4620	CE2	TYR	32	29.614	18.239	18.379	1.00	33.46	H31H C
ATOM	4621	CZ	TYR	32	30.809	17.564	18.315	1.00	33.85	H31H C
ATOM	4622	OH	TYR	32	31.143	16.635	19.278	1.00	35.15	H31H O
ATOM	4623	C	TYR	32	28.758	20.541	12.999	1.00	32.60	H31H C
ATOM	4624	O	TYR	32	29.277	21.281	12.172	1.00	35.97	H31H O
ATOM	4625	N	SER	33	27.449	20.417	13.124	1.00	30.53	H31H N
ATOM	4626	CA	SER	33	26.532	21.322	12.463	1.00	28.81	H31H C
ATOM	4627	CB	SER	33	25.173	20.652	12.302	1.00	25.79	H31H C
ATOM	4628	OG	SER	33	25.209	19.655	11.302	1.00	22.79	H31H O
ATOM	4629	C	SER	33	26.390	22.561	13.335	1.00	29.79	H31H C
ATOM	4630	O	SER	33	26.681	22.519	14.530	1.00	29.74	H31H O
ATOM	4631	N	MET	34	25.939	23.661	12.745	1.00	30.43	H31H N
ATOM	4632	CA	MET	34	25.839	24.916	13.483	1.00	31.05	H31H C
ATOM	4633	CB	MET	34	26.990	25.837	13.106	1.00	31.89	H31H C
ATOM	4634	CG	MET	34	28.361	25.200	13.325	1.00	32.27	H31H C

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ATOM   4635  SD  MET   34      28.799  25.192  15.077  1.00 32.96      H31H S
ATOM   4636  CE  MET   34      28.136  26.768  15.651  1.00 34.63      H31H C
ATOM   4637  C   MET   34      24.519  25.612  13.235  1.00 31.84      H31H C
ATOM   4638  O   MET   34      23.991  25.620  12.120  1.00 30.49      H31H O
ATOM   4639  N   ASN   35      23.981  26.188  14.300  1.00 34.23      H31H N
ATOM   4640  CA  ASN   35      22.678  26.835  14.254  1.00 35.04      H31H C
ATOM   4641  CB  ASN   35      21.686  26.033  15.069  1.00 33.61      H31H C
ATOM   4642  CG  ASN   35      21.946  24.564  14.982  1.00 30.94      H31H C
ATOM   4643  OD1 ASN   35      21.254  23.847  14.272  1.00 30.44      H31H O
ATOM   4644  ND2 ASN   35      22.961  24.098  15.704  1.00 30.36      H31H N
ATOM   4645  C   ASN   35      22.822  28.218  14.851  1.00 36.26      H31H C
ATOM   4646  O   ASN   35      23.693  28.445  15.703  1.00 38.02      H31H O
ATOM   4647  N   TRP   36      21.990  29.143  14.380  1.00 35.97      H31H N
ATOM   4648  CA  TRP   36      21.827  30.419  15.043  1.00 35.60      H31H C
ATOM   4649  CB  TRP   36      21.871  31.563  14.046  1.00 33.77      H31H C
ATOM   4650  CG  TRP   36      23.227  31.892  13.556  1.00 34.67      H31H C
ATOM   4651  CD2 TRP   36      24.252  32.593  14.265  1.00 34.96      H31H C
ATOM   4652  CE2 TRP   36      25.363  32.692  13.398  1.00 35.76      H31H C
ATOM   4653  CE3 TRP   36      24.341  33.149  15.543  1.00 36.02      H31H C
ATOM   4654  CD1 TRP   36      23.743  31.599  12.329  1.00 35.15      H31H C
ATOM   4655  NE1 TRP   36      25.020  32.071  12.225  1.00 34.37      H31H N
ATOM   4656  CZ2 TRP   36      26.556  33.331  13.768  1.00 34.70      H31H C
ATOM   4657  CZ3 TRP   36      25.526  33.783  15.914  1.00 37.06      H31H C
ATOM   4658  CH2 TRP   36      26.618  33.869  15.024  1.00 36.44      H31H C
ATOM   4659  C   TRP   36      20.472  30.381  15.698  1.00 38.32      H31H C
ATOM   4660  O   TRP   36      19.465  30.072  15.043  1.00 38.04      H31H O
ATOM   4661  N   VAL   37      20.455  30.680  16.993  1.00 40.27      H31H N
ATOM   4662  CA  VAL   37      19.212  30.858  17.730  1.00 43.42      H31H C
ATOM   4663  CB  VAL   37      19.034  29.749  18.807  1.00 42.89      H31H C
ATOM   4664  CG1 VAL   37      17.703  29.938  19.523  1.00 39.41      H31H C
ATOM   4665  CG2 VAL   37      19.123  28.358  18.170  1.00 41.48      H31H C
ATOM   4666  C   VAL   37      19.187  32.233  18.416  1.00 46.02      H31H C
ATOM   4667  O   VAL   37      20.165  32.655  19.056  1.00 44.43      H31H O
ATOM   4668  N   ARG   38      18.057  32.921  18.291  1.00 48.68      H31H N
ATOM   4669  CA  ARG   38      17.945  34.276  18.807  1.00 52.25      H31H C
ATOM   4670  CB  ARG   38      17.639  35.253  17.668  1.00 51.00      H31H C
ATOM   4671  CG  ARG   38      16.240  35.109  17.069  1.00 47.89      H31H C
ATOM   4672  CD  ARG   38      16.041  36.123  15.962  1.00 46.37      H31H C
ATOM   4673  NE  ARG   38      14.706  36.073  15.372  1.00 45.46      H31H N
ATOM   4674  CZ  ARG   38      14.329  36.822  14.337  1.00 43.87      H31H C
ATOM   4675  NH1 ARG   38      15.190  37.672  13.791  1.00 43.17      H31H N
ATOM   4676  NH2 ARG   38      13.101  36.720  13.840  1.00 40.65      H31H N
ATOM   4677  C   ARG   38      16.868  34.399  19.872  1.00 56.24      H31H C
ATOM   4678  O   ARG   38      15.848  33.707  19.829  1.00 54.41      H31H O
ATOM   4679  N   GLN   39      17.106  35.311  20.811  1.00 62.26      H31H N
ATOM   4680  CA  GLN   39      16.211  35.540  21.936  1.00 68.98      H31H C
ATOM   4681  CB  GLN   39      16.793  34.868  23.175  1.00 65.66      H31H C
ATOM   4682  CG  GLN   39      15.815  34.613  24.288  1.00 61.47      H31H C
ATOM   4683  CD  GLN   39      16.497  33.981  25.467  1.00 59.61      H31H C
ATOM   4684  OE1 GLN   39      17.640  34.311  25.768  1.00 58.86      H31H O
ATOM   4685  NE2 GLN   39      15.813  33.060  26.139  1.00 59.10      H31H N
ATOM   4686  C   GLN   39      16.018  37.037  22.206  1.00 75.28      H31H C
ATOM   4687  O   GLN   39      16.893  37.691  22.776  1.00 76.14      H31H O
ATOM   4688  N   ALA   40      14.870  37.569  21.798  1.00 82.49      H31H N
ATOM   4689  CA  ALA   40      14.456  38.915  22.195  1.00 88.68      H31H C
ATOM   4690  CB  ALA   40      13.087  39.221  21.614  1.00 86.83      H31H C
ATOM   4691  C   ALA   40      14.403  38.999  23.722  1.00 93.41      H31H C
ATOM   4692  O   ALA   40      14.006  38.041  24.383  1.00 96.08      H31H O
ATOM   4693  N   PRO   41      14.790  40.151  24.304  1.00 96.76      H31H N
ATOM   4694  CD  PRO   41      15.211  41.406  23.659  1.00 99.21      H31H C
ATOM   4695  CA  PRO   41      14.848  40.250  25.769  1.00 98.49      H31H C
ATOM   4696  CB  PRO   41      15.227  41.709  26.015  1.00 99.06      H31H C
ATOM   4697  CG  PRO   41      15.917  42.125  24.767  1.00 99.43      H31H C
ATOM   4698  C   PRO   41      13.519  39.878  26.427  1.00 99.33      H31H C
ATOM   4699  O   PRO   41      12.459  40.368  26.032  1.00 98.92      H31H O
ATOM   4700  N   GLY   42      13.580  39.001  27.423  1.00100.58      H31H N
ATOM   4701  CA  GLY   42      12.365  38.532  28.062  1.00101.63      H31H C
ATOM   4702  C   GLY   42      11.418  37.838  27.102  1.00101.74      H31H C
ATOM   4703  O   GLY   42      10.220  37.766  27.354  1.00103.13      H31H O
ATOM   4704  N   LYS   43      11.950  37.333  25.994  1.00100.03      H31H N
ATOM   4705  CA  LYS   43      11.163  36.535  25.059  1.00 97.53      H31H C
ATOM   4706  CB  LYS   43      11.258  37.115  23.644  1.00100.83      H31H C
ATOM   4707  CG  LYS   43      10.223  38.182  23.322  1.00105.01      H31H C
ATOM   4708  CD  LYS   43       8.805  37.627  23.437  1.00110.42      H31H C
ATOM   4709  CE  LYS   43       7.809  38.418  22.588  1.00115.16      H31H C
ATOM   4710  NZ  LYS   43       7.763  39.871  22.929  1.00120.90      H31H N
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ATOM   4711  C   LYS   43      11.645  35.088  25.049  1.00 93.32      H31H C
ATOM   4712  O   LYS   43      12.586  34.734  25.759  1.00 92.70      H31H O
ATOM   4713  N   GLY   44      10.994  34.257  24.240  1.00 88.87      H31H N
ATOM   4714  CA  GLY   44      11.399  32.867  24.125  1.00 82.75      H31H C
ATOM   4715  C   GLY   44      12.655  32.674  23.294  1.00 77.82      H31H C
ATOM   4716  O   GLY   44      13.386  33.626  23.025  1.00 77.56      H31H O
ATOM   4717  N   LEU   45      12.909  31.428  22.900  1.00 73.49      H31H N
ATOM   4718  CA  LEU   45      13.967  31.093  21.945  1.00 67.33      H31H C
ATOM   4719  CB  LEU   45      14.739  29.858  22.413  1.00 65.36      H31H C
ATOM   4720  CG  LEU   45      15.730  30.019  23.567  1.00 62.88      H31H C
ATOM   4721  CD1 LEU   45      16.271  28.667  23.952  1.00 63.05      H31H C
ATOM   4722  CD2 LEU   45      16.872  30.921  23.158  1.00 62.71      H31H C
ATOM   4723  C   LEU   45      13.368  30.810  20.566  1.00 65.07      H31H C
ATOM   4724  O   LEU   45      12.401  30.055  20.440  1.00 63.83      H31H O
ATOM   4725  N   GLU   46      13.936  31.430  19.536  1.00 62.28      H31H N
ATOM   4726  CA  GLU   46      13.544  31.126  18.170  1.00 59.26      H31H C
ATOM   4727  CB  GLU   46      12.874  32.332  17.522  1.00 59.59      H31H C
ATOM   4728  CG  GLU   46      12.279  31.999  16.166  1.00 64.07      H31H C
ATOM   4729  CD  GLU   46      11.623  33.185  15.462  1.00 66.06      H31H C
ATOM   4730  OE1 GLU   46      10.599  32.954  14.777  1.00 67.56      H31H O
ATOM   4731  OE2 GLU   46      12.126  34.331  15.581  1.00 65.32      H31H O
ATOM   4732  C   GLU   46      14.739  30.681  17.325  1.00 56.58      H31H C
ATOM   4733  O   GLU   46      15.717  31.417  17.160  1.00 56.38      H31H O
ATOM   4734  N   TRP   47      14.653  29.459  16.801  1.00 52.74      H31H N
ATOM   4735  CA  TRP   47      15.666  28.928  15.893  1.00 47.43      H31H C
ATOM   4736  CB  TRP   47      15.390  27.453  15.559  1.00 45.19      H31H C
ATOM   4737  CG  TRP   47      16.115  27.022  14.328  1.00 40.33      H31H C
ATOM   4738  CD2 TRP   47      15.560  26.829  13.019  1.00 38.45      H31H C
ATOM   4739  CE2 TRP   47      16.639  26.587  12.141  1.00 37.27      H31H C
ATOM   4740  CE3 TRP   47      14.260  26.841  12.503  1.00 36.40      H31H C
ATOM   4741  CD1 TRP   47      17.458  26.875  14.197  1.00 39.72      H31H C
ATOM   4742  NE1 TRP   47      17.785  26.620  12.888  1.00 39.52      H31H N
ATOM   4743  CZ2 TRP   47      16.462  26.363  10.775  1.00 34.81      H31H C
ATOM   4744  CZ3 TRP   47      14.084  26.618  11.148  1.00 35.90      H31H C
ATOM   4745  CH2 TRP   47      15.183  26.383  10.296  1.00 34.98      H31H C
ATOM   4746  C   TRP   47      15.659  29.726  14.601  1.00 45.07      H31H C
ATOM   4747  O   TRP   47      14.613  29.880  13.970  1.00 43.66      H31H O
ATOM   4748  N   VAL   48      16.830  30.212  14.200  1.00 43.15      H31H N
ATOM   4749  CA  VAL   48      16.926  31.072  13.025  1.00 41.49      H31H C
ATOM   4750  CB  VAL   48      17.852  32.261  13.274  1.00 42.05      H31H C
ATOM   4751  CG1 VAL   48      18.160  32.943  11.963  1.00 40.58      H31H C
ATOM   4752  CG2 VAL   48      17.191  33.232  14.232  1.00 42.96      H31H C
ATOM   4753  C   VAL   48      17.407  30.374  11.770  1.00 39.83      H31H C
ATOM   4754  O   VAL   48      16.730  30.404  10.736  1.00 37.72      H31H O
ATOM   4755  N   SER   49      18.580  29.752  11.864  1.00 37.12      H31H N
ATOM   4756  CA  SER   49      19.169  29.059  10.722  1.00 35.46      H31H C
ATOM   4757  CB  SER   49      19.985  30.042   9.893  1.00 33.71      H31H C
ATOM   4758  OG  SER   49      20.437  29.445   8.701  1.00 37.92      H31H O
ATOM   4759  C   SER   49      20.060  27.898  11.173  1.00 34.93      H31H C
ATOM   4760  O   SER   49      20.574  27.900  12.291  1.00 34.06      H31H O
ATOM   4761  N   SER   50      20.229  26.897  10.313  1.00 33.84      H31H N
ATOM   4762  CA  SER   50      21.244  25.865  10.552  1.00 31.90      H31H C
ATOM   4763  CB  SER   50      20.598  24.527  10.919  1.00 32.87      H31H C
ATOM   4764  OG  SER   50      20.026  24.569  12.211  1.00 36.99      H31H O
ATOM   4765  C   SER   50      22.101  25.676   9.318  1.00 29.80      H31H C
ATOM   4766  O   SER   50      21.675  25.992   8.208  1.00 30.95      H31H O
ATOM   4767  N   ILE   51      23.306  25.156   9.516  1.00 27.14      H31H N
ATOM   4768  CA  ILE   51      24.194  24.797   8.410  1.00 24.85      H31H C
ATOM   4769  CB  ILE   51      25.101  25.998   8.040  1.00 24.72      H31H C
ATOM   4770  CG2 ILE   51      25.868  26.476   9.254  1.00 24.95      H31H C
ATOM   4771  CG1 ILE   51      26.066  25.604   6.929  1.00 27.20      H31H C
ATOM   4772  CD1 ILE   51      26.529  26.779   6.101  1.00 28.08      H31H C
ATOM   4773  C   ILE   51      25.045  23.587   8.817  1.00 25.34      H31H C
ATOM   4774  O   ILE   51      25.720  23.620   9.851  1.00 24.66      H31H O
ATOM   4775  N   SER   52      25.010  22.509   8.033  1.00 25.68      H31H N
ATOM   4776  CA  SER   52      25.716  21.275   8.435  1.00 24.38      H31H C
ATOM   4777  CB  SER   52      25.185  20.051   7.683  1.00 22.57      H31H C
ATOM   4778  OG  SER   52      25.317  20.181   6.272  1.00 22.51      H31H O
ATOM   4779  C   SER   52      27.203  21.399   8.193  1.00 25.36      H31H C
ATOM   4780  O   SER   52      27.659  22.349   7.547  1.00 27.15      H31H O
ATOM   4781  N   SER   53      27.962  20.429   8.691  1.00 26.78      H31H N
ATOM   4782  CA  SER   53      29.414  20.558   8.715  1.00 27.05      H31H C
ATOM   4783  CB  SER   53      30.061  19.303   9.317  1.00 30.95      H31H C
ATOM   4784  OG  SER   53      29.791  18.147   8.553  1.00 33.86      H31H O
ATOM   4785  C   SER   53      29.998  20.840   7.339  1.00 24.84      H31H C
ATOM   4786  O   SER   53      30.897  21.674   7.200  1.00 23.50      H31H O
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ATOM   4787  N   SER   54      29.475  20.165   6.323  1.00 24.23      H31H N
ATOM   4788  CA  SER   54      29.955  20.384   4.967  1.00 24.68      H31H C
ATOM   4789  CB  SER   54      30.116  19.060   4.223  1.00 23.52      H31H C
ATOM   4790  OG  SER   54      28.858  18.490   3.938  1.00 27.63      H31H O
ATOM   4791  C   SER   54      29.070  21.307   4.146  1.00 26.14      H31H C
ATOM   4792  O   SER   54      29.316  21.469   2.945  1.00 25.03      H31H O
ATOM   4793  N   SER   55      28.054  21.911   4.780  1.00 26.34      H31H N
ATOM   4794  CA  SER   55      27.186  22.904   4.126  1.00 27.36      H31H C
ATOM   4795  CB  SER   55      28.004  24.042   3.500  1.00 24.26      H31H C
ATOM   4796  OG  SER   55      28.836  24.687   4.449  1.00 27.22      H31H O
ATOM   4797  C   SER   55      26.310  22.319   3.025  1.00 30.48      H31H C
ATOM   4798  O   SER   55      26.060  22.985   2.026  1.00 31.05      H31H O
ATOM   4799  N   SER   56      25.843  21.085   3.196  1.00 33.26      H31H N
ATOM   4800  CA  SER   56      25.012  20.433   2.180  1.00 34.73      H31H C
ATOM   4801  CB  SER   56      25.446  18.986   2.021  1.00 35.72      H31H C
ATOM   4802  OG  SER   56      26.824  18.900   2.313  1.00 39.26      H31H O
ATOM   4803  C   SER   56      23.594  20.481   2.688  1.00 34.95      H31H C
ATOM   4804  O   SER   56      22.655  20.002   2.043  1.00 35.68      H31H O
ATOM   4805  N   TYR   57      23.460  21.039   3.882  1.00 34.46      H31H N
ATOM   4806  CA  TYR   57      22.165  21.241   4.499  1.00 34.44      H31H C
ATOM   4807  CB  TYR   57      22.027  20.369   5.740  1.00 33.79      H31H C
ATOM   4808  CG  TYR   57      21.899  18.888   5.474  1.00 35.21      H31H C
ATOM   4809  CD1 TYR   57      22.920  18.020   5.831  1.00 35.98      H31H C
ATOM   4810  CE1 TYR   57      22.790  16.663   5.671  1.00 35.95      H31H C
ATOM   4811  CD2 TYR   57      20.733  18.347   4.931  1.00 33.79      H31H C
ATOM   4812  CE2 TYR   57      20.596  16.980   4.765  1.00 33.48      H31H C
ATOM   4813  CZ  TYR   57      21.632  16.148   5.146  1.00 34.19      H31H C
ATOM   4814  OH  TYR   57      21.526  14.787   5.059  1.00 34.50      H31H O
ATOM   4815  C   TYR   57      22.116  22.683   4.927  1.00 34.00      H31H C
ATOM   4816  O   TYR   57      22.869  23.078   5.808  1.00 37.57      H31H O
ATOM   4817  N   ILE   58      21.247  23.477   4.319  1.00 32.02      H31H N
ATOM   4818  CA  ILE   58      21.036  24.828   4.811  1.00 30.95      H31H C
ATOM   4819  CB  ILE   58      21.641  25.871   3.851  1.00 28.79      H31H C
ATOM   4820  CG2 ILE   58      21.097  27.230   4.152  1.00 29.09      H31H C
ATOM   4821  CG1 ILE   58      23.157  25.900   3.993  1.00 28.87      H31H C
ATOM   4822  CD1 ILE   58      23.842  26.837   3.009  1.00 26.40      H31H C
ATOM   4823  C   ILE   58      19.554  25.102   5.011  1.00 31.64      H31H C
ATOM   4824  O   ILE   58      18.759  24.967   4.087  1.00 32.16      H31H O
ATOM   4825  N   SER   59      19.186  25.469   6.233  1.00 31.86      H31H N
ATOM   4826  CA  SER   59      17.811  25.837   6.528  1.00 32.29      H31H C
ATOM   4827  CB  SER   59      17.191  24.920   7.576  1.00 32.65      H31H C
ATOM   4828  OG  SER   59      17.150  23.589   7.139  1.00 36.33      H31H O
ATOM   4829  C   SER   59      17.739  27.240   7.063  1.00 31.69      H31H C
ATOM   4830  O   SER   59      18.696  27.747   7.661  1.00 30.20      H31H O
ATOM   4831  N   TYR   60      16.568  27.839   6.874  1.00 30.90      H31H N
ATOM   4832  CA  TYR   60      16.235  29.110   7.495  1.00 32.01      H31H C
ATOM   4833  CB  TYR   60      16.383  30.252   6.473  1.00 28.90      H31H C
ATOM   4834  CG  TYR   60      17.790  30.432   5.922  1.00 25.82      H31H C
ATOM   4835  CD1 TYR   60      18.719  31.233   6.586  1.00 24.60      H31H C
ATOM   4836  CE1 TYR   60      19.980  31.462   6.059  1.00 25.44      H31H C
ATOM   4837  CD2 TYR   60      18.165  29.850   4.713  1.00 21.26      H31H C
ATOM   4838  CE2 TYR   60      19.415  30.063   4.176  1.00 23.84      H31H C
ATOM   4839  CZ  TYR   60      20.331  30.878   4.846  1.00 27.34      H31H C
ATOM   4840  OH  TYR   60      21.583  31.133   4.295  1.00 24.44      H31H O
ATOM   4841  C   TYR   60      14.798  29.065   8.034  1.00 34.54      H31H C
ATOM   4842  O   TYR   60      13.929  28.376   7.482  1.00 34.40      H31H O
ATOM   4843  N   ALA   61      14.551  29.796   9.118  1.00 37.78      H31H N
ATOM   4844  CA  ALA   61      13.187  30.030   9.576  1.00 40.86      H31H C
ATOM   4845  CB  ALA   61      13.214  30.679  10.946  1.00 42.20      H31H C
ATOM   4846  C   ALA   61      12.468  30.937   8.573  1.00 42.66      H31H C
ATOM   4847  O   ALA   61      13.079  31.851   8.009  1.00 40.39      H31H O
ATOM   4848  N   ASP   62      11.175  30.681   8.357  1.00 46.05      H31H N
ATOM   4849  CA  ASP   62      10.362  31.465   7.409  1.00 49.44      H31H C
ATOM   4850  CB  ASP   62       8.874  31.073   7.494  1.00 52.61      H31H C
ATOM   4851  CG  ASP   62       8.480  29.984   6.482  1.00 56.56      H31H C
ATOM   4852  OD1 ASP   62       7.576  29.165   6.791  1.00 58.22      H31H O
ATOM   4853  OD2 ASP   62       9.062  29.946   5.376  1.00 58.42      H31H O
ATOM   4854  C   ASP   62      10.488  32.976   7.609  1.00 49.31      H31H C
ATOM   4855  O   ASP   62      10.516  33.727   6.641  1.00 48.62      H31H O
ATOM   4856  N   SER   63      10.573  33.418   8.859  1.00 49.39      H31H N
ATOM   4857  CA  SER   63      10.617  34.847   9.152  1.00 49.60      H31H C
ATOM   4858  CB  SER   63      10.284  35.089  10.625  1.00 51.26      H31H C
ATOM   4859  OG  SER   63      11.163  34.376  11.473  1.00 52.27      H31H O
ATOM   4860  C   SER   63      11.946  35.526   8.810  1.00 49.28      H31H C
ATOM   4861  O   SER   63      12.054  36.754   8.864  1.00 49.16      H31H O
ATOM   4862  N   VAL   64      12.964  34.739   8.477  1.00 49.23      H31H N
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ATOM   4863  CA  VAL   64      14.203  35.316   7.978  1.00 48.95      H31H C
ATOM   4864  CB  VAL   64      15.410  34.952   8.851  1.00 47.82      H31H C
ATOM   4865  CG1 VAL   64      15.263  35.543  10.224  1.00 46.76      H31H C
ATOM   4866  CG2 VAL   64      15.542  33.458   8.924  1.00 49.37      H31H C
ATOM   4867  C   VAL   64      14.482  34.840   6.569  1.00 49.25      H31H C
ATOM   4868  O   VAL   64      15.322  35.401   5.881  1.00 49.52      H31H O
ATOM   4869  N   LYS   65      13.784  33.803   6.136  1.00 49.86      H31H N
ATOM   4870  CA  LYS   65      14.060  33.254   4.826  1.00 52.89      H31H C
ATOM   4871  CB  LYS   65      13.015  32.197   4.467  1.00 55.35      H31H C
ATOM   4872  CG  LYS   65      13.477  31.183   3.436  1.00 60.33      H31H C
ATOM   4873  CD  LYS   65      12.342  30.252   3.010  1.00 66.57      H31H C
ATOM   4874  CE  LYS   65      11.667  29.602   4.212  1.00 71.34      H31H C
ATOM   4875  NZ  LYS   65      12.525  28.612   4.925  1.00 79.97      H31H N
ATOM   4876  C   LYS   65      14.034  34.402   3.822  1.00 52.76      H31H C
ATOM   4877  O   LYS   65      13.028  35.079   3.675  1.00 54.46      H31H O
ATOM   4878  N   GLY   66      15.156  34.637   3.153  1.00 52.42      H31H N
ATOM   4879  CA  GLY   66      15.207  35.685   2.158  1.00 49.76      H31H C
ATOM   4880  C   GLY   66      16.102  36.835   2.565  1.00 50.14      H31H C
ATOM   4881  O   GLY   66      16.658  37.526   1.717  1.00 50.75      H31H O
ATOM   4882  N   ARG   67      16.255  37.045   3.866  1.00 49.59      H31H N
ATOM   4883  CA  ARG   67      16.979  38.208   4.368  1.00 47.70      H31H C
ATOM   4884  CB  ARG   67      16.146  38.939   5.429  1.00 48.66      H31H C
ATOM   4885  CG  ARG   67      15.156  39.953   4.890  1.00 47.79      H31H C
ATOM   4886  CD  ARG   67      13.700  39.689   5.337  1.00 49.90      H31H C
ATOM   4887  NE  ARG   67      13.499  39.282   6.738  1.00 49.54      H31H N
ATOM   4888  CZ  ARG   67      13.916  39.954   7.808  1.00 48.90      H31H C
ATOM   4889  NH1 ARG   67      14.590  41.090   7.674  1.00 46.55      H31H N
ATOM   4890  NH2 ARG   67      13.622  39.500   9.019  1.00 47.78      H31H N
ATOM   4891  C   ARG   67      18.326  37.841   4.969  1.00 46.20      H31H C
ATOM   4892  O   ARG   67      19.294  38.596   4.863  1.00 46.99      H31H O
ATOM   4893  N   PHE   68      18.391  36.697   5.630  1.00 44.42      H31H N
ATOM   4894  CA  PHE   68      19.646  36.302   6.262  1.00 43.90      H31H C
ATOM   4895  CB  PHE   68      19.390  35.737   7.658  1.00 46.31      H31H C
ATOM   4896  CG  PHE   68      18.923  36.755   8.655  1.00 48.27      H31H C
ATOM   4897  CD1 PHE   68      18.783  36.410   9.991  1.00 48.40      H31H C
ATOM   4898  CD2 PHE   68      18.633  38.058   8.265  1.00 49.75      H31H C
ATOM   4899  CE1 PHE   68      18.361  37.344  10.925  1.00 50.45      H31H C
ATOM   4900  CE2 PHE   68      18.207  38.998   9.193  1.00 49.99      H31H C
ATOM   4901  CZ  PHE   68      18.073  38.642  10.525  1.00 50.51      H31H C
ATOM   4902  C   PHE   68      20.393  35.265   5.434  1.00 41.81      H31H C
ATOM   4903  O   PHE   68      19.790  34.417   4.782  1.00 42.54      H31H O
ATOM   4904  N   THR   69      21.712  35.318   5.453  1.00 39.78      H31H N
ATOM   4905  CA  THR   69      22.451  34.211   4.884  1.00 37.73      H31H C
ATOM   4906  CB  THR   69      23.226  34.631   3.637  1.00 37.83      H31H C
ATOM   4907  OG1 THR   69      22.324  35.241   2.707  1.00 40.88      H31H O
ATOM   4908  CG2 THR   69      23.843  33.418   2.980  1.00 36.18      H31H C
ATOM   4909  C   THR   69      23.404  33.638   5.902  1.00 36.00      H31H C
ATOM   4910  O   THR   69      24.206  34.365   6.497  1.00 34.40      H31H O
ATOM   4911  N   ILE   70      23.287  32.331   6.107  1.00 33.23      H31H N
ATOM   4912  CA  ILE   70      24.162  31.610   7.015  1.00 32.07      H31H C
ATOM   4913  CB  ILE   70      23.375  30.489   7.735  1.00 31.36      H31H C
ATOM   4914  CG2 ILE   70      22.789  29.499   6.722  1.00 28.51      H31H C
ATOM   4915  CG1 ILE   70      24.263  29.778   8.739  1.00 28.22      H31H C
ATOM   4916  CD1 ILE   70      23.492  28.722   9.500  1.00 26.73      H31H C
ATOM   4917  C   ILE   70      25.327  31.020   6.221  1.00 33.56      H31H C
ATOM   4918  O   ILE   70      25.172  30.647   5.052  1.00 32.66      H31H O
ATOM   4919  N   SER   71      26.499  30.962   6.845  1.00 34.11      H31H N
ATOM   4920  CA  SER   71      27.667  30.376   6.196  1.00 35.09      H31H C
ATOM   4921  CB  SER   71      28.220  31.321   5.130  1.00 34.90      H31H C
ATOM   4922  OG  SER   71      28.839  32.451   5.718  1.00 38.50      H31H O
ATOM   4923  C   SER   71      28.734  30.114   7.225  1.00 35.70      H31H C
ATOM   4924  O   SER   71      28.878  30.872   8.167  1.00 37.92      H31H O
ATOM   4925  N   ARG   72      29.490  29.043   7.053  1.00 36.94      H31H N
ATOM   4926  CA  ARG   72      30.624  28.806   7.931  1.00 37.72      H31H C
ATOM   4927  CB  ARG   72      30.459  27.472   8.667  1.00 36.35      H31H C
ATOM   4928  CG  ARG   72      29.515  26.487   7.986  1.00 33.89      H31H C
ATOM   4929  CD  ARG   72      30.152  25.131   7.804  1.00 31.35      H31H C
ATOM   4930  NE  ARG   72      30.836  24.658   9.002  1.00 30.33      H31H N
ATOM   4931  CZ  ARG   72      30.230  24.045  10.015  1.00 31.11      H31H C
ATOM   4932  NH1 ARG   72      28.920  23.839   9.976  1.00 32.29      H31H N
ATOM   4933  NH2 ARG   72      30.934  23.608  11.055  1.00 30.74      H31H N
ATOM   4934  C   ARG   72      31.939  28.813   7.165  1.00 38.69      H31H C
ATOM   4935  O   ARG   72      31.957  28.750   5.944  1.00 35.95      H31H O
ATOM   4936  N   ASP   73      33.037  28.892   7.906  1.00 42.23      H31H N
ATOM   4937  CA  ASP   73      34.380  28.780   7.344  1.00 44.50      H31H C
ATOM   4938  CB  ASP   73      35.056  30.154   7.307  1.00 46.65      H31H C
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ATOM   4939  CG  ASP   73      36.385  30.126   6.577  1.00 50.59      H31H C
ATOM   4940  OD1 ASP   73      36.846  29.015   6.248  1.00 53.52      H31H O
ATOM   4941  OD2 ASP   73      36.969  31.207   6.323  1.00 53.00      H31H O
ATOM   4942  C   ASP   73      35.206  27.839   8.219  1.00 45.16      H31H C
ATOM   4943  O   ASP   73      35.841  28.279   9.180  1.00 44.90      H31H O
ATOM   4944  N   ASN   74      35.206  26.550   7.887  1.00 46.03      H31H N
ATOM   4945  CA  ASN   74      35.841  25.545   8.742  1.00 45.42      H31H C
ATOM   4946  CB  ASN   74      35.761  24.167   8.108  1.00 43.35      H31H C
ATOM   4947  CG  ASN   74      34.398  23.569   8.208  1.00 40.70      H31H C
ATOM   4948  OD1 ASN   74      33.479  24.181   8.738  1.00 38.41      H31H O
ATOM   4949  ND2 ASN   74      34.254  22.353   7.696  1.00 42.55      H31H N
ATOM   4950  C   ASN   74      37.297  25.859   8.995  1.00 45.96      H31H C
ATOM   4951  O   ASN   74      37.777  25.768  10.126  1.00 47.31      H31H O
ATOM   4952  N   ALA   75      37.998  26.209   7.925  1.00 44.61      H31H N
ATOM   4953  CA  ALA   75      39.411  26.523   8.003  1.00 43.81      H31H C
ATOM   4954  CB  ALA   75      39.864  27.138   6.693  1.00 41.11      H31H C
ATOM   4955  C   ALA   75      39.617  27.503   9.138  1.00 45.05      H31H C
ATOM   4956  O   ALA   75      40.545  27.359   9.941  1.00 45.68      H31H O
ATOM   4957  N   LYS   76      38.725  28.490   9.194  1.00 46.12      H31H N
ATOM   4958  CA  LYS   76      38.763  29.549  10.189  1.00 46.69      H31H C
ATOM   4959  CB  LYS   76      38.127  30.815   9.626  1.00 48.88      H31H C
ATOM   4960  CG  LYS   76      38.887  31.472   8.494  1.00 49.92      H31H C
ATOM   4961  CD  LYS   76      38.191  32.768   8.107  1.00 51.68      H31H C
ATOM   4962  CE  LYS   76      39.084  33.660   7.272  1.00 52.61      H31H C
ATOM   4963  NZ  LYS   76      38.491  35.025   7.225  1.00 56.36      H31H N
ATOM   4964  C   LYS   76      38.034  29.169  11.470  1.00 46.37      H31H C
ATOM   4965  O   LYS   76      38.020  29.934  12.432  1.00 48.52      H31H O
ATOM   4966  N   ASN   77      37.410  27.999  11.488  1.00 44.21      H31H N
ATOM   4967  CA  ASN   77      36.691  27.587  12.685  1.00 41.76      H31H C
ATOM   4968  CB  ASN   77      37.656  27.462  13.870  1.00 41.56      H31H C
ATOM   4969  CG  ASN   77      38.109  26.038  14.116  1.00 41.99      H31H C
ATOM   4970  OD1 ASN   77      37.684  25.402  15.078  1.00 45.05      H31H O
ATOM   4971  ND2 ASN   77      38.980  25.532  13.255  1.00 41.31      H31H N
ATOM   4972  C   ASN   77      35.637  28.636  13.034  1.00 40.31      H31H C
ATOM   4973  O   ASN   77      35.521  29.024  14.187  1.00 39.76      H31H O
ATOM   4974  N   SER   78      34.873  29.106  12.056  1.00 38.73      H31H N
ATOM   4975  CA  SER   78      33.932  30.171  12.348  1.00 38.78      H31H C
ATOM   4976  CB  SER   78      34.564  31.524  12.031  1.00 37.52      H31H C
ATOM   4977  OG  SER   78      35.815  31.629  12.700  1.00 40.76      H31H O
ATOM   4978  C   SER   78      32.589  30.047  11.655  1.00 39.34      H31H C
ATOM   4979  O   SER   78      32.450  29.364  10.632  1.00 38.37      H31H O
ATOM   4980  N   LEU   79      31.601  30.709  12.249  1.00 38.57      H31H N
ATOM   4981  CA  LEU   79      30.232  30.704  11.759  1.00 38.65      H31H C
ATOM   4982  CB  LEU   79      29.313  30.097  12.811  1.00 37.25      H31H C
ATOM   4983  CG  LEU   79      27.843  30.034  12.420  1.00 36.78      H31H C
ATOM   4984  CD1 LEU   79      27.708  29.259  11.119  1.00 34.19      H31H C
ATOM   4985  CD2 LEU   79      27.043  29.381  13.547  1.00 37.12      H31H C
ATOM   4986  C   LEU   79      29.840  32.147  11.517  1.00 39.27      H31H C
ATOM   4987  O   LEU   79      30.407  33.045  12.136  1.00 40.45      H31H O
ATOM   4988  N   TYR   80      28.884  32.377  10.620  1.00 38.92      H31H N
ATOM   4989  CA  TYR   80      28.496  33.740  10.241  1.00 37.79      H31H C
ATOM   4990  CB  TYR   80      29.241  34.233   8.993  1.00 36.09      H31H C
ATOM   4991  CG  TYR   80      30.730  34.123   9.073  1.00 36.73      H31H C
ATOM   4992  CD1 TYR   80      31.421  33.202   8.289  1.00 37.10      H31H C
ATOM   4993  CE1 TYR   80      32.800  33.070   8.391  1.00 37.42      H31H C
ATOM   4994  CD2 TYR   80      31.455  34.913   9.957  1.00 36.52      H31H C
ATOM   4995  CE2 TYR   80      32.837  34.791  10.065  1.00 37.01      H31H C
ATOM   4996  CZ  TYR   80      33.501  33.866   9.285  1.00 36.52      H31H C
ATOM   4997  OH  TYR   80      34.860  33.706   9.429  1.00 36.87      H31H O
ATOM   4998  C   TYR   80      27.033  33.766   9.919  1.00 37.36      H31H C
ATOM   4999  O   TYR   80      26.479  32.778   9.415  1.00 38.45      H31H O
ATOM   5000  N   LEU   81      26.424  34.913  10.191  1.00 36.86      H31H N
ATOM   5001  CA  LEU   81      25.080  35.214   9.731  1.00 38.28      H31H C
ATOM   5002  CB  LEU   81      24.131  35.156  10.923  1.00 38.22      H31H C
ATOM   5003  CG  LEU   81      22.641  35.249  10.624  1.00 42.17      H31H C
ATOM   5004  CD1 LEU   81      22.202  34.037   9.801  1.00 42.79      H31H C
ATOM   5005  CD2 LEU   81      21.868  35.317  11.946  1.00 42.84      H31H C
ATOM   5006  C   LEU   81      25.048  36.608   9.066  1.00 39.75      H31H C
ATOM   5007  O   LEU   81      25.212  37.633   9.734  1.00 40.10      H31H O
ATOM   5008  N   GLN   82      24.850  36.651   7.751  1.00 40.37      H31H N
ATOM   5009  CA  GLN   82      24.705  37.930   7.061  1.00 41.87      H31H C
ATOM   5010  CB  GLN   82      24.978  37.783   5.569  1.00 42.62      H31H C
ATOM   5011  CG  GLN   82      26.194  38.551   5.084  1.00 42.97      H31H C
ATOM   5012  CD  GLN   82      26.244  39.958   5.634  1.00 43.64      H31H C
ATOM   5013  OE1 GLN   82      27.320  40.479   5.913  1.00 38.06      H31H O
ATOM   5014  NE2 GLN   82      25.068  40.586   5.794  1.00 44.28      H31H N
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ATOM   5015  C   GLN   82      23.291  38.408   7.219  1.00 42.93      H31H C
ATOM   5016  O   GLN   82      22.388  37.803   6.666  1.00 45.25      H31H O
ATOM   5017  N   MET   83      23.083  39.489   7.958  1.00 44.37      H31H N
ATOM   5018  CA  MET   83      21.722  39.984   8.172  1.00 46.84      H31H C
ATOM   5019  CB  MET   83      21.500  40.300   9.651  1.00 48.94      H31H C
ATOM   5020  CG  MET   83      21.310  39.076  10.530  1.00 51.24      H31H C
ATOM   5021  SD  MET   83      21.149  39.501  12.271  1.00 54.99      H31H S
ATOM   5022  CE  MET   83      22.766  40.207  12.592  1.00 49.92      H31H C
ATOM   5023  C   MET   83      21.410  41.222   7.330  1.00 46.55      H31H C
ATOM   5024  O   MET   83      22.081  42.247   7.434  1.00 47.66      H31H O
ATOM   5025  N   ASN   84      20.389  41.119   6.494  1.00 45.09      H31H N
ATOM   5026  CA  ASN   84      20.077  42.179   5.558  1.00 44.96      H31H C
ATOM   5027  CB  ASN   84      20.227  41.676   4.119  1.00 46.67      H31H C
ATOM   5028  CG  ASN   84      21.666  41.478   3.722  1.00 49.33      H31H C
ATOM   5029  OD1 ASN   84      22.441  42.440   3.639  1.00 50.57      H31H O
ATOM   5030  ND2 ASN   84      22.045  40.226   3.475  1.00 50.44      H31H N
ATOM   5031  C   ASN   84      18.653  42.614   5.790  1.00 44.59      H31H C
ATOM   5032  O   ASN   84      17.833  41.829   6.257  1.00 42.65      H31H O
ATOM   5033  N   SER   85      18.356  43.861   5.443  1.00 44.77      H31H N
ATOM   5034  CA  SER   85      16.991  44.357   5.525  1.00 45.45      H31H C
ATOM   5035  CB  SER   85      16.067  43.579   4.595  1.00 42.38      H31H C
ATOM   5036  OG  SER   85      16.474  43.734   3.259  1.00 40.36      H31H O
ATOM   5037  C   SER   85      16.488  44.194   6.935  1.00 47.12      H31H C
ATOM   5038  O   SER   85      15.347  43.761   7.151  1.00 47.21      H31H O
ATOM   5039  N   LEU   86      17.336  44.529   7.896  1.00 47.75      H31H N
ATOM   5040  CA  LEU   86      16.960  44.316   9.266  1.00 51.11      H31H C
ATOM   5041  CB  LEU   86      18.081  44.791  10.184  1.00 47.93      H31H C
ATOM   5042  CG  LEU   86      19.154  43.706  10.351  1.00 45.15      H31H C
ATOM   5043  CD1 LEU   86      20.334  44.222  11.166  1.00 43.75      H31H C
ATOM   5044  CD2 LEU   86      18.526  42.496  11.017  1.00 41.27      H31H C
ATOM   5045  C   LEU   86      15.629  45.008   9.578  1.00 55.36      H31H C
ATOM   5046  O   LEU   86      15.174  45.903   8.854  1.00 55.80      H31H O
ATOM   5047  N   ARG   87      14.987  44.543  10.639  1.00 59.60      H31H N
ATOM   5048  CA  ARG   87      13.719  45.090  11.079  1.00 63.34      H31H C
ATOM   5049  CB  ARG   87      12.580  44.161  10.673  1.00 63.61      H31H C
ATOM   5050  CG  ARG   87      12.534  43.801   9.202  1.00 66.77      H31H C
ATOM   5051  CD  ARG   87      11.671  42.563   9.001  1.00 71.73      H31H C
ATOM   5052  NE  ARG   87      11.220  42.384   7.620  1.00 76.44      H31H N
ATOM   5053  CZ  ARG   87      10.722  41.246   7.134  1.00 78.44      H31H C
ATOM   5054  NH1 ARG   87      10.333  41.178   5.866  1.00 79.88      H31H N
ATOM   5055  NH2 ARG   87      10.621  40.172   7.910  1.00 77.64      H31H N
ATOM   5056  C   ARG   87      13.795  45.179  12.603  1.00 66.43      H31H C
ATOM   5057  O   ARG   87      14.652  44.544  13.222  1.00 66.59      H31H O
ATOM   5058  N   ALA   88      12.911  45.970  13.210  1.00 69.22      H31H N
ATOM   5059  CA  ALA   88      12.838  46.026  14.669  1.00 70.35      H31H C
ATOM   5060  CB  ALA   88      11.691  46.937  15.101  1.00 71.65      H31H C
ATOM   5061  C   ALA   88      12.626  44.603  15.208  1.00 71.16      H31H C
ATOM   5062  O   ALA   88      13.061  44.263  16.317  1.00 70.52      H31H O
ATOM   5063  N   GLU   89      11.979  43.778  14.386  1.00 70.86      H31H N
ATOM   5064  CA  GLU   89      11.535  42.442  14.767  1.00 70.01      H31H C
ATOM   5065  CB  GLU   89      10.529  41.912  13.743  1.00 72.23      H31H C
ATOM   5066  CG  GLU   89       9.345  42.832  13.487  1.00 79.51      H31H C
ATOM   5067  CD  GLU   89       9.752  44.288  13.250  1.00 83.99      H31H C
ATOM   5068  OE1 GLU   89       9.627  45.104  14.191  1.00 86.96      H31H O
ATOM   5069  OE2 GLU   89      10.198  44.620  12.127  1.00 86.67      H31H O
ATOM   5070  C   GLU   89      12.706  41.477  14.859  1.00 66.80      H31H C
ATOM   5071  O   GLU   89      12.559  40.355  15.325  1.00 68.37      H31H O
ATOM   5072  N   ASP   90      13.871  41.906  14.404  1.00 61.86      H31H N
ATOM   5073  CA  ASP   90      15.043  41.058  14.496  1.00 58.04      H31H C
ATOM   5074  CB  ASP   90      15.880  41.127  13.207  1.00 56.31      H31H C
ATOM   5075  CG  ASP   90      15.065  40.877  11.949  1.00 54.61      H31H C
ATOM   5076  OD1 ASP   90      14.182  39.988  11.952  1.00 53.40      H31H O
ATOM   5077  OD2 ASP   90      15.326  41.580  10.948  1.00 52.88      H31H O
ATOM   5078  C   ASP   90      15.904  41.481  15.675  1.00 56.02      H31H C
ATOM   5079  O   ASP   90      17.039  41.038  15.808  1.00 56.72      H31H O
ATOM   5080  N   THR   91      15.397  42.346  16.540  1.00 54.77      H31H N
ATOM   5081  CA  THR   91      16.217  42.699  17.693  1.00 53.43      H31H C
ATOM   5082  CB  THR   91      15.783  44.029  18.353  1.00 53.62      H31H C
ATOM   5083  OG1 THR   91      15.867  45.102  17.400  1.00 52.95      H31H O
ATOM   5084  CG2 THR   91      16.703  44.349  19.531  1.00 52.72      H31H C
ATOM   5085  C   THR   91      16.113  41.580  18.712  1.00 51.54      H31H C
ATOM   5086  O   THR   91      15.016  41.114  19.023  1.00 52.16      H31H O
ATOM   5087  N   ALA   92      17.256  41.142  19.218  1.00 48.98      H31H N
ATOM   5088  CA  ALA   92      17.306  39.982  20.096  1.00 48.01      H31H C
ATOM   5089  CB  ALA   92      16.595  38.804  19.447  1.00 48.07      H31H C
ATOM   5090  C   ALA   92      18.752  39.615  20.385  1.00 47.42      H31H C
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ATOM   5091  O   ALA    92      19.667  40.032  19.660  1.00 46.91      H31H O
ATOM   5092  N   VAL    93      18.973  38.843  21.443  1.00 47.37      H31H N
ATOM   5093  CA  VAL    93      20.286  38.247  21.599  1.00 48.79      H31H C
ATOM   5094  CB  VAL    93      20.576  37.784  23.057  1.00 48.74      H31H C
ATOM   5095  CG1 VAL    93      21.909  37.018  23.110  1.00 46.43      H31H C
ATOM   5096  CG2 VAL    93      20.676  39.004  23.973  1.00 48.32      H31H C
ATOM   5097  C   VAL    93      20.340  37.073  20.634  1.00 48.44      H31H C
ATOM   5098  O   VAL    93      19.307  36.484  20.299  1.00 47.17      H31H O
ATOM   5099  N   TYR    94      21.550  36.779  20.163  1.00 48.07      H31H N
ATOM   5100  CA  TYR    94      21.765  35.885  19.039  1.00 46.52      H31H C
ATOM   5101  CB  TYR    94      22.207  36.690  17.811  1.00 45.40      H31H C
ATOM   5102  CG  TYR    94      21.060  37.203  16.970  1.00 44.60      H31H C
ATOM   5103  CD1 TYR    94      20.530  36.420  15.960  1.00 45.87      H31H C
ATOM   5104  CE1 TYR    94      19.435  36.836  15.214  1.00 45.29      H31H C
ATOM   5105  CD2 TYR    94      20.466  38.440  17.217  1.00 44.37      H31H C
ATOM   5106  CE2 TYR    94      19.357  38.868  16.469  1.00 43.30      H31H C
ATOM   5107  CZ  TYR    94      18.852  38.046  15.470  1.00 43.79      H31H C
ATOM   5108  OH  TYR    94      17.748  38.377  14.726  1.00 42.59      H31H O
ATOM   5109  C   TYR    94      22.849  34.899  19.428  1.00 47.42      H31H C
ATOM   5110  O   TYR    94      24.013  35.290  19.592  1.00 47.83      H31H O
ATOM   5111  N   PHE    95      22.464  33.628  19.582  1.00 46.90      H31H N
ATOM   5112  CA  PHE    95      23.404  32.567  19.947  1.00 45.06      H31H C
ATOM   5113  CB  PHE    95      22.786  31.652  20.997  1.00 44.52      H31H C
ATOM   5114  CG  PHE    95      22.223  32.371  22.185  1.00 44.23      H31H C
ATOM   5115  CD1 PHE    95      23.018  32.644  23.290  1.00 42.47      H31H C
ATOM   5116  CD2 PHE    95      20.885  32.724  22.225  1.00 43.04      H31H C
ATOM   5117  CE1 PHE    95      22.482  33.251  24.414  1.00 41.09      H31H C
ATOM   5118  CE2 PHE    95      20.347  33.333  23.351  1.00 41.79      H31H C
ATOM   5119  CZ  PHE    95      21.146  33.595  24.443  1.00 40.34      H31H C
ATOM   5120  C   PHE    95      23.772  31.710  18.738  1.00 45.62      H31H C
ATOM   5121  O   PHE    95      22.952  31.490  17.847  1.00 44.98      H31H O
ATOM   5122  N   CYS    96      24.999  31.201  18.713  1.00 46.61      H31H N
ATOM   5123  CA  CYS    96      25.268  29.992  17.943  1.00 47.13      H31H C
ATOM   5124  C   CYS    96      25.289  28.826  18.903  1.00 46.71      H31H C
ATOM   5125  O   CYS    96      25.674  28.979  20.065  1.00 48.53      H31H O
ATOM   5126  CB  CYS    96      26.613  30.064  17.213  1.00 48.93      H31H C
ATOM   5127  SG  CYS    96      27.983  30.710  18.215  1.00 51.77      H31H S
ATOM   5128  N   ALA    97      24.858  27.667  18.419  1.00 45.19      H31H N
ATOM   5129  CA  ALA    97      25.093  26.411  19.114  1.00 43.27      H31H C
ATOM   5130  CB  ALA    97      23.829  25.984  19.849  1.00 43.29      H31H C
ATOM   5131  C   ALA    97      25.502  25.350  18.089  1.00 42.74      H31H C
ATOM   5132  O   ALA    97      25.105  25.410  16.921  1.00 43.45      H31H O
ATOM   5133  N   ARG    98      26.291  24.375  18.522  1.00 40.05      H31H N
ATOM   5134  CA  ARG    98      26.621  23.242  17.668  1.00 35.65      H31H C
ATOM   5135  CB  ARG    98      28.018  22.754  17.967  1.00 32.17      H31H C
ATOM   5136  CG  ARG    98      28.119  22.079  19.301  1.00 31.31      H31H C
ATOM   5137  CD  ARG    98      29.532  21.582  19.568  1.00 33.70      H31H C
ATOM   5138  NE  ARG    98      29.505  20.508  20.553  1.00 35.51      H31H N
ATOM   5139  CZ  ARG    98      30.575  19.838  20.966  1.00 35.38      H31H C
ATOM   5140  NH1 ARG    98      31.776  20.127  20.484  1.00 35.88      H31H N
ATOM   5141  NH2 ARG    98      30.443  18.868  21.857  1.00 35.44      H31H N
ATOM   5142  C   ARG    98      25.660  22.086  17.877  1.00 35.56      H31H C
ATOM   5143  O   ARG    98      24.942  22.026  18.867  1.00 34.36      H31H O
ATOM   5144  N   ASP    99      25.656  21.173  16.918  1.00 36.76      H31H N
ATOM   5145  CA  ASP    99      25.133  19.830  17.108  1.00 37.67      H31H C
ATOM   5146  CB  ASP    99      23.600  19.794  16.903  1.00 40.46      H31H C
ATOM   5147  CG  ASP    99      23.156  20.217  15.498  1.00 43.61      H31H C
ATOM   5148  OD1 ASP    99      23.413  21.369  15.081  1.00 46.81      H31H O
ATOM   5149  OD2 ASP    99      22.519  19.392  14.808  1.00 47.79      H31H O
ATOM   5150  C   ASP    99      25.843  18.915  16.116  1.00 38.10      H31H C
ATOM   5151  O   ASP    99      25.848  19.191  14.922  1.00 38.27      H31H O
ATOM   5152  N   TYR   100      26.459  17.844  16.615  1.00 38.50      H31H N
ATOM   5153  CA  TYR   100      27.167  16.884  15.774  1.00 38.52      H31H C
ATOM   5154  CB  TYR   100      27.589  15.658  16.596  1.00 39.27      H31H C
ATOM   5155  CG  TYR   100      28.459  14.673  15.824  1.00 42.22      H31H C
ATOM   5156  CD1 TYR   100      29.841  14.817  15.770  1.00 42.22      H31H C
ATOM   5157  CE1 TYR   100      30.622  13.949  15.012  1.00 44.08      H31H C
ATOM   5158  CD2 TYR   100      27.887  13.629  15.105  1.00 42.57      H31H C
ATOM   5159  CE2 TYR   100      28.656  12.765  14.355  1.00 43.34      H31H C
ATOM   5160  CZ  TYR   100      30.014  12.929  14.308  1.00 44.31      H31H C
ATOM   5161  OH  TYR   100      30.743  12.066  13.525  1.00 47.41      H31H O
ATOM   5162  C   TYR   100      26.339  16.435  14.569  1.00 38.28      H31H C
ATOM   5163  O   TYR   100      25.145  16.127  14.681  1.00 39.03      H31H O
ATOM   5164  N   ASP   101      27.010  16.382  13.423  1.00 36.46      H31H N
ATOM   5165  CA  ASP   101      26.376  16.244  12.120  1.00 34.34      H31H C
ATOM   5166  CB  ASP   101      27.209  17.043  11.104  1.00 35.01      H31H C
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ATOM   5167  CG  ASP   101      26.672  16.953   9.702  1.00 35.89      H31H C
ATOM   5168  OD1 ASP   101      25.668  16.233   9.508  1.00 37.29      H31H O
ATOM   5169  OD2 ASP   101      27.255  17.603   8.794  1.00 36.30      H31H O
ATOM   5170  C   ASP   101      26.261  14.764  11.717  1.00 33.54      H31H C
ATOM   5171  O   ASP   101      27.227  14.139  11.288  1.00 34.19      H31H O
ATOM   5172  N   PHE   102      25.066  14.209  11.867  1.00 32.47      H31H N
ATOM   5173  CA  PHE   102      24.817  12.807  11.553  1.00 32.51      H31H C
ATOM   5174  CB  PHE   102      23.784  12.216  12.528  1.00 30.44      H31H C
ATOM   5175  CG  PHE   102      24.275  12.156  13.954  1.00 30.38      H31H C
ATOM   5176  CD1 PHE   102      25.064  11.100  14.387  1.00 29.51      H31H C
ATOM   5177  CD2 PHE   102      23.982  13.178  14.849  1.00 29.52      H31H C
ATOM   5178  CE1 PHE   102      25.551  11.073  15.686  1.00 29.97      H31H C
ATOM   5179  CE2 PHE   102      24.459  13.157  16.144  1.00 27.61      H31H C
ATOM   5180  CZ  PHE   102      25.244  12.112  16.567  1.00 28.39      H31H C
ATOM   5181  C   PHE   102      24.332  12.637  10.125  1.00 32.53      H31H C
ATOM   5182  O   PHE   102      23.776  11.597   9.776  1.00 33.61      H31H O
ATOM   5183  N   TRP   103      24.530  13.662   9.304  1.00 31.13      H31H N
ATOM   5184  CA  TRP   103      24.184  13.562   7.895  1.00 30.67      H31H C
ATOM   5185  CB  TRP   103      25.121  12.554   7.252  1.00 31.31      H31H C
ATOM   5186  CG  TRP   103      26.556  12.931   7.490  1.00 31.50      H31H C
ATOM   5187  CD2 TRP   103      27.346  13.801   6.686  1.00 29.89      H31H C
ATOM   5188  CE2 TRP   103      28.607  13.916   7.310  1.00 28.91      H31H C
ATOM   5189  CE3 TRP   103      27.112  14.496   5.491  1.00 28.60      H31H C
ATOM   5190  CD1 TRP   103      27.348  12.558   8.544  1.00 31.47      H31H C
ATOM   5191  NE1 TRP   103      28.578  13.147   8.443  1.00 28.09      H31H N
ATOM   5192  CZ2 TRP   103      29.634  14.700   6.779  1.00 27.83      H31H C
ATOM   5193  CZ3 TRP   103      28.132  15.274   4.960  1.00 27.26      H31H C
ATOM   5194  CH2 TRP   103      29.382  15.369   5.606  1.00 26.36      H31H C
ATOM   5195  C   TRP   103      22.714  13.168   7.704  1.00 29.90      H31H C
ATOM   5196  O   TRP   103      22.367  12.385   6.815  1.00 30.62      H31H O
ATOM   5197  N   SER   104      21.878  13.725   8.579  1.00 28.52      H31H N
ATOM   5198  CA  SER   104      20.420  13.590   8.576  1.00 28.62      H31H C
ATOM   5199  CB  SER   104      19.846  13.762   7.144  1.00 27.84      H31H C
ATOM   5200  OG  SER   104      19.749  12.558   6.387  1.00 27.27      H31H O
ATOM   5201  C   SER   104      19.918  12.298   9.222  1.00 29.81      H31H C
ATOM   5202  O   SER   104      18.702  12.069   9.311  1.00 31.22      H31H O
ATOM   5203  N   ALA   105      20.844  11.459   9.684  1.00 28.06      H31H N
ATOM   5204  CA  ALA   105      20.452  10.163  10.233  1.00 27.77      H31H C
ATOM   5205  CB  ALA   105      21.681   9.306  10.506  1.00 21.95      H31H C
ATOM   5206  C   ALA   105      19.667  10.370  11.525  1.00 28.00      H31H C
ATOM   5207  O   ALA   105      18.822   9.557  11.908  1.00 28.93      H31H O
ATOM   5208  N   TYR   106      19.957  11.480  12.187  1.00 29.04      H31H N
ATOM   5209  CA  TYR   106      19.459  11.743  13.522  1.00 29.36      H31H C
ATOM   5210  CB  TYR   106      20.144  10.823  14.532  1.00 27.64      H31H C
ATOM   5211  CG  TYR   106      19.677  11.081  15.939  1.00 26.39      H31H C
ATOM   5212  CD1 TYR   106      20.543  11.580  16.907  1.00 24.73      H31H C
ATOM   5213  CE1 TYR   106      20.087  11.839  18.199  1.00 26.54      H31H C
ATOM   5214  CD2 TYR   106      18.348  10.847  16.297  1.00 24.05      H31H C
ATOM   5215  CE2 TYR   106      17.885  11.098  17.574  1.00 24.69      H31H C
ATOM   5216  CZ  TYR   106      18.748  11.594  18.526  1.00 26.04      H31H C
ATOM   5217  OH  TYR   106      18.269  11.851  19.795  1.00 25.58      H31H O
ATOM   5218  C   TYR   106      19.773  13.189  13.858  1.00 30.98      H31H C
ATOM   5219  O   TYR   106      20.887  13.666  13.605  1.00 33.21      H31H O
ATOM   5220  N   TYR   107      18.793  13.892  14.415  1.00 32.40      H31H N
ATOM   5221  CA  TYR   107      19.002  15.270  14.847  1.00 31.17      H31H C
ATOM   5222  CB  TYR   107      17.799  16.120  14.440  1.00 30.89      H31H C
ATOM   5223  CG  TYR   107      17.611  16.171  12.936  1.00 30.51      H31H C
ATOM   5224  CD1 TYR   107      16.553  15.511  12.326  1.00 31.26      H31H C
ATOM   5225  CE1 TYR   107      16.430  15.479  10.946  1.00 31.80      H31H C
ATOM   5226  CD2 TYR   107      18.545  16.816  12.119  1.00 28.58      H31H C
ATOM   5227  CE2 TYR   107      18.432  16.792  10.743  1.00 28.43      H31H C
ATOM   5228  CZ  TYR   107      17.374  16.118  10.161  1.00 30.95      H31H C
ATOM   5229  OH  TYR   107      17.275  16.046   8.794  1.00 31.71      H31H O
ATOM   5230  C   TYR   107      19.257  15.337  16.351  1.00 31.17      H31H C
ATOM   5231  O   TYR   107      18.357  15.246  17.163  1.00 30.52      H31H O
ATOM   5232  N   ASP   108      20.521  15.470  16.714  1.00 34.73      H31H N
ATOM   5233  CA  ASP   108      20.916  15.519  18.112  1.00 35.64      H31H C
ATOM   5234  CB  ASP   108      22.427  15.347  18.208  1.00 36.20      H31H C
ATOM   5235  CG  ASP   108      22.883  15.015  19.607  1.00 36.50      H31H C
ATOM   5236  OD1 ASP   108      22.011  14.673  20.434  1.00 32.41      H31H O
ATOM   5237  OD2 ASP   108      24.108  15.097  19.870  1.00 39.02      H31H O
ATOM   5238  C   ASP   108      20.500  16.867  18.708  1.00 36.58      H31H C
ATOM   5239  O   ASP   108      20.003  17.745  17.988  1.00 39.14      H31H O
ATOM   5240  N   ALA   109      20.695  17.033  20.012  1.00 35.61      H31H N
ATOM   5241  CA  ALA   109      20.442  18.320  20.654  1.00 35.70      H31H C
ATOM   5242  CB  ALA   109      20.263  18.135  22.155  1.00 35.91      H31H C
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ATOM   5243  C   ALA   109      21.616  19.247  20.382  1.00 35.45      H31H C
ATOM   5244  O   ALA   109      22.711  18.781  20.079  1.00 37.43      H31H O
ATOM   5245  N   PHE   110      21.379  20.549  20.479  1.00 34.40      H31H N
ATOM   5246  CA  PHE   110      22.445  21.546  20.407  1.00 35.00      H31H C
ATOM   5247  CB  PHE   110      21.872  22.963  20.195  1.00 34.51      H31H C
ATOM   5248  CG  PHE   110      20.961  23.102  18.997  1.00 33.42      H31H C
ATOM   5249  CD1 PHE   110      20.489  24.342  18.619  1.00 33.80      H31H C
ATOM   5250  CD2 PHE   110      20.560  22.003  18.266  1.00 34.66      H31H C
ATOM   5251  CE1 PHE   110      19.638  24.482  17.544  1.00 33.62      H31H C
ATOM   5252  CE2 PHE   110      19.703  22.146  17.186  1.00 34.07      H31H C
ATOM   5253  CZ  PHE   110      19.246  23.382  16.831  1.00 33.99      H31H C
ATOM   5254  C   PHE   110      23.181  21.523  21.742  1.00 35.07      H31H C
ATOM   5255  O   PHE   110      22.827  22.255  22.665  1.00 36.68      H31H O
ATOM   5256  N   ASP   111      24.204  20.698  21.863  1.00 34.77      H31H N
ATOM   5257  CA  ASP   111      24.739  20.446  23.185  1.00 37.29      H31H C
ATOM   5258  CB  ASP   111      25.618  19.183  23.190  1.00 36.40      H31H C
ATOM   5259  CG  ASP   111      26.789  19.262  22.221  1.00 35.66      H31H C
ATOM   5260  OD1 ASP   111      26.798  20.147  21.339  1.00 34.96      H31H O
ATOM   5261  OD2 ASP   111      27.708  18.419  22.349  1.00 37.27      H31H O
ATOM   5262  C   ASP   111      25.501  21.613  23.790  1.00 38.76      H31H C
ATOM   5263  O   ASP   111      25.620  21.695  25.006  1.00 40.16      H31H O
ATOM   5264  N   VAL   112      26.017  22.516  22.963  1.00 40.27      H31H N
ATOM   5265  CA  VAL   112      26.888  23.577  23.473  1.00 41.93      H31H C
ATOM   5266  CB  VAL   112      28.369  23.296  23.147  1.00 43.13      H31H C
ATOM   5267  CG1 VAL   112      29.266  24.239  23.943  1.00 40.95      H31H C
ATOM   5268  CG2 VAL   112      28.709  21.828  23.435  1.00 40.65      H31H C
ATOM   5269  C   VAL   112      26.526  24.909  22.843  1.00 43.13      H31H C
ATOM   5270  O   VAL   112      26.478  25.009  21.616  1.00 44.68      H31H O
ATOM   5271  N   TRP   113      26.275  25.928  23.668  1.00 43.43      H31H N
ATOM   5272  CA  TRP   113      25.983  27.269  23.149  1.00 43.70      H31H C
ATOM   5273  CB  TRP   113      24.672  27.793  23.712  1.00 40.08      H31H C
ATOM   5274  CG  TRP   113      23.485  26.921  23.464  1.00 37.13      H31H C
ATOM   5275  CD2 TRP   113      22.154  27.366  23.183  1.00 34.61      H31H C
ATOM   5276  CE2 TRP   113      21.323  26.235  23.184  1.00 34.01      H31H C
ATOM   5277  CE3 TRP   113      21.588  28.613  22.936  1.00 34.32      H31H C
ATOM   5278  CD1 TRP   113      23.414  25.568  23.604  1.00 35.50      H31H C
ATOM   5279  NE1 TRP   113      22.112  25.147  23.444  1.00 35.84      H31H N
ATOM   5280  CZ2 TRP   113      19.955  26.313  22.946  1.00 36.16      H31H C
ATOM   5281  CZ3 TRP   113      20.224  28.690  22.699  1.00 36.33      H31H C
ATOM   5282  CH2 TRP   113      19.424  27.552  22.706  1.00 35.59      H31H C
ATOM   5283  C   TRP   113      27.071  28.316  23.429  1.00 45.51      H31H C
ATOM   5284  O   TRP   113      27.778  28.251  24.446  1.00 44.71      H31H O
ATOM   5285  N   GLY   114      27.193  29.282  22.519  1.00 46.53      H31H N
ATOM   5286  CA  GLY   114      27.996  30.458  22.795  1.00 49.42      H31H C
ATOM   5287  C   GLY   114      27.275  31.384  23.754  1.00 52.13      H31H C
ATOM   5288  O   GLY   114      26.102  31.175  24.058  1.00 51.42      H31H O
ATOM   5289  N   GLN   115      27.973  32.416  24.221  1.00 56.29      H31H N
ATOM   5290  CA  GLN   115      27.459  33.318  25.260  1.00 59.63      H31H C
ATOM   5291  CB  GLN   115      28.611  34.141  25.840  1.00 63.79      H31H C
ATOM   5292  CG  GLN   115      29.457  33.380  26.847  1.00 71.42      H31H C
ATOM   5293  CD  GLN   115      28.620  32.832  27.993  1.00 76.37      H31H C
ATOM   5294  OE1 GLN   115      28.448  33.496  29.022  1.00 79.37      H31H O
ATOM   5295  NE2 GLN   115      28.086  31.617  27.818  1.00 80.03      H31H N
ATOM   5296  C   GLN   115      26.337  34.260  24.820  1.00 58.74      H31H C
ATOM   5297  O   GLN   115      25.461  34.613  25.610  1.00 57.37      H31H O
ATOM   5298  N   GLY   116      26.374  34.666  23.559  1.00 58.43      H31H N
ATOM   5299  CA  GLY   116      25.326  35.507  23.019  1.00 58.13      H31H C
ATOM   5300  C   GLY   116      25.876  36.841  22.544  1.00 59.56      H31H C
ATOM   5301  O   GLY   116      26.974  37.260  22.938  1.00 59.14      H31H O
ATOM   5302  N   THR   117      25.110  37.514  21.690  1.00 60.54      H31H N
ATOM   5303  CA  THR   117      25.468  38.853  21.226  1.00 59.73      H31H C
ATOM   5304  CB  THR   117      26.301  38.779  19.926  1.00 60.22      H31H C
ATOM   5305  OG1 THR   117      27.299  39.801  19.943  1.00 60.73      H31H O
ATOM   5306  CG2 THR   117      25.410  38.972  18.710  1.00 59.64      H31H C
ATOM   5307  C   THR   117      24.165  39.616  20.975  1.00 58.58      H31H C
ATOM   5308  O   THR   117      23.145  39.014  20.634  1.00 55.70      H31H O
ATOM   5309  N   MET   118      24.188  40.931  21.175  1.00 58.61      H31H N
ATOM   5310  CA  MET   118      22.944  41.700  21.156  1.00 58.29      H31H C
ATOM   5311  CB  MET   118      22.865  42.626  22.377  1.00 55.41      H31H C
ATOM   5312  CG  MET   118      21.515  43.324  22.541  1.00 54.00      H31H C
ATOM   5313  SD  MET   118      20.114  42.172  22.578  1.00 54.63      H31H S
ATOM   5314  CE  MET   118      18.732  43.182  21.995  1.00 51.15      H31H C
ATOM   5315  C   MET   118      22.777  42.504  19.867  1.00 59.12      H31H C
ATOM   5316  O   MET   118      23.583  43.371  19.538  1.00 58.18      H31H O
ATOM   5317  N   VAL   119      21.724  42.188  19.129  1.00 61.17      H31H N
ATOM   5318  CA  VAL   119      21.431  42.899  17.907  1.00 63.75      H31H C
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ATOM   5319  CB  VAL   119      21.186  41.930  16.730  1.00 62.58      H31H C
ATOM   5320  CG1 VAL   119      20.577  42.678  15.548  1.00 61.18      H31H C
ATOM   5321  CG2 VAL   119      22.502  41.298  16.309  1.00 61.02      H31H C
ATOM   5322  C   VAL   119      20.191  43.728  18.145  1.00 66.03      H31H C
ATOM   5323  O   VAL   119      19.113  43.188  18.410  1.00 67.24      H31H O
ATOM   5324  N   THR   120      20.360  45.046  18.061  1.00 67.50      H31H N
ATOM   5325  CA  THR   120      19.261  45.983  18.247  1.00 66.26      H31H C
ATOM   5326  CB  THR   120      19.589  47.049  19.299  1.00 65.93      H31H C
ATOM   5327  OG1 THR   120      20.422  46.489  20.329  1.00 64.19      H31H O
ATOM   5328  CG2 THR   120      18.298  47.570  19.908  1.00 62.66      H31H C
ATOM   5329  C   THR   120      19.009  46.707  16.942  1.00 65.33      H31H C
ATOM   5330  O   THR   120      19.924  47.309  16.373  1.00 64.94      H31H O
ATOM   5331  N   VAL   121      17.767  46.651  16.478  1.00 64.42      H31H N
ATOM   5332  CA  VAL   121      17.370  47.370  15.282  1.00 64.31      H31H C
ATOM   5333  CB  VAL   121      16.748  46.407  14.242  1.00 64.18      H31H C
ATOM   5334  CG1 VAL   121      16.259  47.176  13.018  1.00 63.06      H31H C
ATOM   5335  CG2 VAL   121      17.771  45.370  13.839  1.00 62.69      H31H C
ATOM   5336  C   VAL   121      16.368  48.462  15.641  1.00 65.00      H31H C
ATOM   5337  O   VAL   121      15.201  48.181  15.953  1.00 64.07      H31H O
ATOM   5338  N   SER   122      16.837  49.709  15.610  1.00 65.59      H31H N
ATOM   5339  CA  SER   122      15.948  50.861  15.712  1.00 66.99      H31H C
ATOM   5340  CB  SER   122      15.411  51.015  17.134  1.00 67.36      H31H C
ATOM   5341  OG  SER   122      14.609  52.182  17.233  1.00 67.09      H31H O
ATOM   5342  C   SER   122      16.563  52.190  15.284  1.00 67.53      H31H C
ATOM   5343  O   SER   122      17.785  52.371  15.235  1.00 66.70      H31H O
ATOM   5344  N   SER   123      15.672  53.125  14.992  1.00 67.46      H31H N
ATOM   5345  CA  SER   123      16.044  54.457  14.568  1.00 65.91      H31H C
ATOM   5346  CB  SER   123      14.839  55.103  13.898  1.00 65.83      H31H C
ATOM   5347  OG  SER   123      13.660  54.388  14.237  1.00 63.82      H31H O
ATOM   5348  C   SER   123      16.526  55.306  15.741  1.00 64.19      H31H C
ATOM   5349  O   SER   123      17.133  56.350  15.543  1.00 64.69      H31H O
ATOM   5350  N   ALA   124      16.262  54.848  16.959  1.00 62.50      H31H N
ATOM   5351  CA  ALA   124      16.615  55.594  18.163  1.00 61.24      H31H C
ATOM   5352  CB  ALA   124      16.471  54.709  19.382  1.00 61.18      H31H C
ATOM   5353  C   ALA   124      18.016  56.184  18.124  1.00 61.63      H31H C
ATOM   5354  O   ALA   124      18.869  55.742  17.355  1.00 62.06      H31H O
ATOM   5355  N   SER   125      18.243  57.185  18.970  1.00 61.89      H31H N
ATOM   5356  CA  SER   125      19.499  57.927  18.985  1.00 61.67      H31H C
ATOM   5357  CB  SER   125      19.631  58.731  17.687  1.00 63.06      H31H C
ATOM   5358  OG  SER   125      20.889  59.378  17.586  1.00 65.82      H31H O
ATOM   5359  C   SER   125      19.496  58.854  20.208  1.00 60.83      H31H C
ATOM   5360  O   SER   125      18.436  59.271  20.668  1.00 60.45      H31H O
ATOM   5361  N   THR   126      20.683  59.165  20.725  1.00 59.55      H31H N
ATOM   5362  CA  THR   126      20.843  59.763  22.055  1.00 58.53      H31H C
ATOM   5363  CB  THR   126      22.361  60.096  22.324  1.00 59.12      H31H C
ATOM   5364  OG1 THR   126      22.496  60.854  23.539  1.00 57.87      H31H O
ATOM   5365  CG2 THR   126      22.968  60.874  21.156  1.00 57.69      H31H C
ATOM   5366  C   THR   126      19.973  61.005  22.314  1.00 57.27      H31H C
ATOM   5367  O   THR   126      20.164  62.051  21.693  1.00 58.39      H31H O
ATOM   5368  N   LYS   127      19.026  60.878  23.247  1.00 54.41      H31H N
ATOM   5369  CA  LYS   127      17.996  61.901  23.478  1.00 50.77      H31H C
ATOM   5370  CB  LYS   127      16.834  61.696  22.505  1.00 49.90      H31H C
ATOM   5371  CG  LYS   127      15.469  61.689  23.161  1.00 48.86      H31H C
ATOM   5372  CD  LYS   127      14.393  61.926  22.117  1.00 49.04      H31H C
ATOM   5373  CE  LYS   127      13.002  62.077  22.731  1.00 49.43      H31H C
ATOM   5374  NZ  LYS   127      12.866  63.275  23.602  1.00 48.62      H31H N
ATOM   5375  C   LYS   127      17.441  61.934  24.908  1.00 48.34      H31H C
ATOM   5376  O   LYS   127      17.107  60.895  25.480  1.00 48.08      H31H O
ATOM   5377  N   GLY   128      17.321  63.138  25.464  1.00 45.40      H31H N
ATOM   5378  CA  GLY   128      16.933  63.289  26.858  1.00 41.87      H31H C
ATOM   5379  C   GLY   128      15.431  63.204  27.066  1.00 40.01      H31H C
ATOM   5380  O   GLY   128      14.664  63.391  26.124  1.00 38.07      H31H O
ATOM   5381  N   PRO   129      14.978  62.914  28.296  1.00 40.21      H31H N
ATOM   5382  CD  PRO   129      15.828  62.783  29.492  1.00 40.34      H31H C
ATOM   5383  CA  PRO   129      13.566  62.665  28.617  1.00 39.64      H31H C
ATOM   5384  CB  PRO   129      13.636  61.979  29.967  1.00 38.84      H31H C
ATOM   5385  CG  PRO   129      14.824  62.610  30.603  1.00 39.50      H31H C
ATOM   5386  C   PRO   129      12.685  63.929  28.677  1.00 39.72      H31H C
ATOM   5387  O   PRO   129      13.155  65.020  28.963  1.00 38.60      H31H O
ATOM   5388  N   SER   130      11.401  63.753  28.397  1.00 40.04      H31H N
ATOM   5389  CA  SER   130      10.380  64.702  28.806  1.00 39.31      H31H C
ATOM   5390  CB  SER   130       9.172  64.635  27.857  1.00 39.01      H31H C
ATOM   5391  OG  SER   130       9.521  64.950  26.520  1.00 40.33      H31H O
ATOM   5392  C   SER   130       9.944  64.253  30.190  1.00 38.84      H31H C
ATOM   5393  O   SER   130       9.720  63.073  30.395  1.00 39.02      H31H O
ATOM   5394  N   VAL   131       9.812  65.179  31.133  1.00 38.94      H31H N
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ATOM   5395  CA  VAL   131       9.342  64.822  32.462  1.00 37.98      H31H C
ATOM   5396  CB  VAL   131      10.370  65.220  33.533  1.00 38.94      H31H C
ATOM   5397  CG1 VAL   131      10.159  64.377  34.794  1.00 37.15      H31H C
ATOM   5398  CG2 VAL   131      11.776  65.066  32.982  1.00 37.53      H31H C
ATOM   5399  C   VAL   131       8.010  65.493  32.798  1.00 39.20      H31H C
ATOM   5400  O   VAL   131       7.889  66.717  32.855  1.00 39.59      H31H O
ATOM   5401  N   PHE   132       6.997  64.686  33.036  1.00 40.76      H31H N
ATOM   5402  CA  PHE   132       5.727  65.231  33.454  1.00 41.89      H31H C
ATOM   5403  CB  PHE   132       4.625  64.733  32.531  1.00 45.07      H31H C
ATOM   5404  CG  PHE   132       4.873  65.039  31.086  1.00 47.51      H31H C
ATOM   5405  CD1 PHE   132       4.524  66.274  30.556  1.00 45.96      H31H C
ATOM   5406  CD2 PHE   132       5.457  64.091  30.255  1.00 47.99      H31H C
ATOM   5407  CE1 PHE   132       4.752  66.554  29.224  1.00 47.37      H31H C
ATOM   5408  CE2 PHE   132       5.687  64.370  28.921  1.00 49.35      H31H C
ATOM   5409  CZ  PHE   132       5.332  65.605  28.405  1.00 48.08      H31H C
ATOM   5410  C   PHE   132       5.468  64.782  34.867  1.00 42.41      H31H C
ATOM   5411  O   PHE   132       5.802  63.667  35.239  1.00 40.02      H31H O
ATOM   5412  N   PRO   133       4.874  65.651  35.681  1.00 44.73      H31H N
ATOM   5413  CD  PRO   133       4.401  67.008  35.358  1.00 42.60      H31H C
ATOM   5414  CA  PRO   133       4.565  65.279  37.059  1.00 45.76      H31H C
ATOM   5415  CB  PRO   133       4.235  66.612  37.709  1.00 44.76      H31H C
ATOM   5416  CG  PRO   133       3.636  67.410  36.595  1.00 41.73      H31H C
ATOM   5417  C   PRO   133       3.374  64.345  37.062  1.00 47.64      H31H C
ATOM   5418  O   PRO   133       2.421  64.559  36.325  1.00 49.24      H31H O
ATOM   5419  N   LEU   134       3.430  63.306  37.880  1.00 48.88      H31H N
ATOM   5420  CA  LEU   134       2.235  62.537  38.190  1.00 50.70      H31H C
ATOM   5421  CB  LEU   134       2.554  61.046  38.207  1.00 50.15      H31H C
ATOM   5422  CG  LEU   134       3.341  60.531  36.999  1.00 49.91      H31H C
ATOM   5423  CD1 LEU   134       3.959  59.175  37.321  1.00 48.75      H31H C
ATOM   5424  CD2 LEU   134       2.424  60.455  35.788  1.00 49.17      H31H C
ATOM   5425  C   LEU   134       1.798  62.984  39.575  1.00 52.49      H31H C
ATOM   5426  O   LEU   134       2.431  62.629  40.567  1.00 53.95      H31H O
ATOM   5427  N   ALA   135       0.726  63.768  39.639  1.00 54.85      H31H N
ATOM   5428  CA  ALA   135       0.292  64.375  40.892  1.00 57.86      H31H C
ATOM   5429  CB  ALA   135      -0.610  65.564  40.606  1.00 54.42      H31H C
ATOM   5430  C   ALA   135      -0.436  63.387  41.784  1.00 60.60      H31H C
ATOM   5431  O   ALA   135      -0.947  62.377  41.318  1.00 60.28      H31H O
ATOM   5432  N   PRO   136      -0.488  63.674  43.088  1.00 64.55      H31H N
ATOM   5433  CD  PRO   136       0.300  64.741  43.725  1.00 67.29      H31H C
ATOM   5434  CA  PRO   136      -1.275  62.919  44.067  1.00 69.15      H31H C
ATOM   5435  CB  PRO   136      -0.755  63.421  45.409  1.00 69.65      H31H C
ATOM   5436  CG  PRO   136      -0.256  64.790  45.123  1.00 68.88      H31H C
ATOM   5437  C   PRO   136      -2.775  63.155  43.917  1.00 72.89      H31H C
ATOM   5438  O   PRO   136      -3.215  64.290  43.691  1.00 73.33      H31H O
ATOM   5439  N   SER   137      -3.552  62.080  44.058  1.00 77.84      H31H N
ATOM   5440  CA  SER   137      -5.003  62.131  43.878  1.00 82.41      H31H C
ATOM   5441  CB  SER   137      -5.583  60.712  43.864  1.00 82.42      H31H C
ATOM   5442  OG  SER   137      -5.241  60.017  45.050  1.00 83.20      H31H O
ATOM   5443  C   SER   137      -5.682  62.948  44.973  1.00 84.96      H31H C
ATOM   5444  O   SER   137      -5.100  63.201  46.028  1.00 87.33      H31H O
ATOM   5445  N   GLY   144      -3.876  56.071  54.474  1.00 84.33      H31H N
ATOM   5446  CA  GLY   144      -3.690  57.342  55.159  1.00 83.90      H31H C
ATOM   5447  C   GLY   144      -2.769  58.322  54.437  1.00 82.39      H31H C
ATOM   5448  O   GLY   144      -2.568  59.450  54.882  1.00 82.07      H31H O
ATOM   5449  N   THR   145      -2.202  57.898  53.316  1.00 80.81      H31H N
ATOM   5450  CA  THR   145      -1.246  58.729  52.603  1.00 79.74      H31H C
ATOM   5451  CB  THR   145       0.194  58.274  52.897  1.00 81.45      H31H C
ATOM   5452  OG1 THR   145       0.388  56.939  52.413  1.00 82.63      H31H O
ATOM   5453  CG2 THR   145       0.460  58.315  54.389  1.00 81.35      H31H C
ATOM   5454  C   THR   145      -1.490  58.699  51.093  1.00 78.23      H31H C
ATOM   5455  O   THR   145      -2.372  57.985  50.607  1.00 76.79      H31H O
ATOM   5456  N   ALA   146      -0.708  59.486  50.357  1.00 76.75      H31H N
ATOM   5457  CA  ALA   146      -0.910  59.648  48.922  1.00 74.80      H31H C
ATOM   5458  CB  ALA   146      -1.355  61.071  48.617  1.00 74.54      H31H C
ATOM   5459  C   ALA   146       0.359  59.320  48.151  1.00 72.36      H31H C
ATOM   5460  O   ALA   146       1.468  59.474  48.662  1.00 72.82      H31H O
ATOM   5461  N   ALA   147       0.187  58.857  46.917  1.00 68.95      H31H N
ATOM   5462  CA  ALA   147       1.320  58.517  46.062  1.00 64.43      H31H C
ATOM   5463  CB  ALA   147       1.154  57.116  45.501  1.00 65.16      H31H C
ATOM   5464  C   ALA   147       1.447  59.513  44.921  1.00 61.83      H31H C
ATOM   5465  O   ALA   147       0.531  59.677  44.116  1.00 61.04      H31H O
ATOM   5466  N   LEU   148       2.587  60.180  44.851  1.00 58.23      H31H N
ATOM   5467  CA  LEU   148       2.890  60.984  43.689  1.00 55.96      H31H C
ATOM   5468  CB  LEU   148       3.086  62.448  44.072  1.00 55.54      H31H C
ATOM   5469  CG  LEU   148       4.068  62.755  45.194  1.00 54.79      H31H C
ATOM   5470  CD1 LEU   148       5.140  63.728  44.718  1.00 57.06      H31H C
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ATOM   5471  CD2 LEU   148       3.289  63.337  46.346  1.00 54.72      H31H C
ATOM   5472  C   LEU   148       4.149  60.448  43.063  1.00 54.70      H31H C
ATOM   5473  O   LEU   148       4.822  59.596  43.633  1.00 54.10      H31H O
ATOM   5474  N   GLY   149       4.462  60.946  41.879  1.00 53.02      H31H N
ATOM   5475  CA  GLY   149       5.675  60.521  41.221  1.00 51.68      H31H C
ATOM   5476  C   GLY   149       5.905  61.418  40.034  1.00 49.79      H31H C
ATOM   5477  O   GLY   149       5.166  62.368  39.832  1.00 50.10      H31H O
ATOM   5478  N   CYS   150       6.927  61.131  39.246  1.00 48.52      H31H N
ATOM   5479  CA  CYS   150       7.064  61.821  37.986  1.00 47.23      H31H C
ATOM   5480  C   CYS   150       7.447  60.877  36.839  1.00 43.82      H31H C
ATOM   5481  O   CYS   150       8.290  60.002  36.996  1.00 43.71      H31H O
ATOM   5482  CB  CYS   150       8.048  62.988  38.150  1.00 49.36      H31H C
ATOM   5483  SG  CYS   150       9.812  62.571  38.243  1.00 56.29      H31H S
ATOM   5484  N   LEU   151       6.772  61.050  35.701  1.00 41.91      H31H N
ATOM   5485  CA  LEU   151       6.853  60.144  34.545  1.00 40.54      H31H C
ATOM   5486  CB  LEU   151       5.505  60.099  33.823  1.00 40.30      H31H C
ATOM   5487  CG  LEU   151       5.616  59.625  32.371  1.00 40.58      H31H C
ATOM   5488  CD1 LEU   151       6.148  58.202  32.343  1.00 42.03      H31H C
ATOM   5489  CD2 LEU   151       4.256  59.696  31.685  1.00 40.84      H31H C
ATOM   5490  C   LEU   151       7.924  60.558  33.533  1.00 40.01      H31H C
ATOM   5491  O   LEU   151       7.765  61.548  32.833  1.00 39.20      H31H O
ATOM   5492  N   VAL   152       9.000  59.789  33.444  1.00 40.24      H31H N
ATOM   5493  CA  VAL   152      10.169  60.190  32.664  1.00 41.29      H31H C
ATOM   5494  CB  VAL   152      11.463  59.823  33.443  1.00 40.87      H31H C
ATOM   5495  CG1 VAL   152      12.663  60.541  32.856  1.00 41.31      H31H C
ATOM   5496  CG2 VAL   152      11.292  60.147  34.921  1.00 38.03      H31H C
ATOM   5497  C   VAL   152      10.164  59.463  31.312  1.00 42.74      H31H C
ATOM   5498  O   VAL   152      10.623  58.321  31.225  1.00 45.26      H31H O
ATOM   5499  N   LYS   153       9.654  60.098  30.257  1.00 43.18      H31H N
ATOM   5500  CA  LYS   153       9.476  59.375  28.991  1.00 45.09      H31H C
ATOM   5501  CB  LYS   153       8.035  59.501  28.491  1.00 44.98      H31H C
ATOM   5502  CG  LYS   153       7.594  60.909  28.168  1.00 46.95      H31H C
ATOM   5503  CD  LYS   153       6.077  60.974  27.919  1.00 49.28      H31H C
ATOM   5504  CE  LYS   153       5.711  60.748  26.441  1.00 49.98      H31H C
ATOM   5505  NZ  LYS   153       4.315  61.196  26.093  1.00 48.65      H31H N
ATOM   5506  C   LYS   153      10.425  59.736  27.848  1.00 45.72      H31H C
ATOM   5507  O   LYS   153      11.028  60.813  27.822  1.00 46.61      H31H O
ATOM   5508  N   ASP   154      10.568  58.798  26.920  1.00 45.12      H31H N
ATOM   5509  CA  ASP   154      11.169  59.055  25.618  1.00 45.38      H31H C
ATOM   5510  CB  ASP   154      10.349  60.101  24.882  1.00 44.90      H31H C
ATOM   5511  CG  ASP   154       8.960  59.602  24.521  1.00 48.08      H31H C
ATOM   5512  OD1 ASP   154       8.805  58.376  24.299  1.00 49.40      H31H O
ATOM   5513  OD2 ASP   154       8.019  60.434  24.455  1.00 51.13      H31H O
ATOM   5514  C   ASP   154      12.639  59.453  25.601  1.00 45.46      H31H C
ATOM   5515  O   ASP   154      13.013  60.401  24.932  1.00 44.22      H31H O
ATOM   5516  N   TYR   155      13.476  58.712  26.318  1.00 47.16      H31H N
ATOM   5517  CA  TYR   155      14.921  58.918  26.259  1.00 49.79      H31H C
ATOM   5518  CB  TYR   155      15.467  59.204  27.659  1.00 51.22      H31H C
ATOM   5519  CG  TYR   155      15.315  58.042  28.623  1.00 54.62      H31H C
ATOM   5520  CD1 TYR   155      16.430  57.412  29.156  1.00 55.10      H31H C
ATOM   5521  CE1 TYR   155      16.294  56.327  30.002  1.00 57.77      H31H C
ATOM   5522  CD2 TYR   155      14.055  57.556  28.970  1.00 54.59      H31H C
ATOM   5523  CE2 TYR   155      13.909  56.479  29.811  1.00 55.80      H31H C
ATOM   5524  CZ  TYR   155      15.031  55.860  30.325  1.00 57.60      H31H C
ATOM   5525  OH  TYR   155      14.905  54.749  31.139  1.00 59.92      H31H O
ATOM   5526  C   TYR   155      15.669  57.716  25.654  1.00 50.37      H31H C
ATOM   5527  O   TYR   155      15.057  56.698  25.296  1.00 48.82      H31H O
ATOM   5528  N   PHE   156      16.991  57.866  25.549  1.00 49.83      H31H N
ATOM   5529  CA  PHE   156      17.889  56.872  24.984  1.00 50.40      H31H C
ATOM   5530  CB  PHE   156      17.494  56.525  23.545  1.00 51.14      H31H C
ATOM   5531  CG  PHE   156      18.311  55.411  22.949  1.00 52.08      H31H C
ATOM   5532  CD1 PHE   156      19.596  55.651  22.470  1.00 53.14      H31H C
ATOM   5533  CD2 PHE   156      17.818  54.112  22.922  1.00 52.74      H31H C
ATOM   5534  CE1 PHE   156      20.379  54.618  21.982  1.00 54.59      H31H C
ATOM   5535  CE2 PHE   156      18.592  53.068  22.437  1.00 54.30      H31H C
ATOM   5536  CZ  PHE   156      19.875  53.317  21.966  1.00 54.91      H31H C
ATOM   5537  C   PHE   156      19.306  57.436  24.975  1.00 52.12      H31H C
ATOM   5538  O   PHE   156      19.518  58.620  24.715  1.00 51.42      H31H O
ATOM   5539  N   PRO   157      20.303  56.586  25.246  1.00 52.79      H31H N
ATOM   5540  CD  PRO   157      21.723  56.973  25.178  1.00 55.23      H31H C
ATOM   5541  CA  PRO   157      20.151  55.191  25.668  1.00 56.36      H31H C
ATOM   5542  CB  PRO   157      21.487  54.576  25.285  1.00 54.78      H31H C
ATOM   5543  CG  PRO   157      22.456  55.688  25.531  1.00 54.58      H31H C
ATOM   5544  C   PRO   157      19.921  55.158  27.179  1.00 58.64      H31H C
ATOM   5545  O   PRO   157      19.828  56.220  27.807  1.00 60.21      H31H O
ATOM   5546  N   GLU   158      19.850  53.960  27.761  1.00 59.18      H31H N
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ATOM   5547  CA  GLU  158      19.939  53.803  29.217  1.00 60.12      H31H C
ATOM   5548  CB  GLU  158      19.800  52.330  29.593  1.00 60.44      H31H C
ATOM   5549  CG  GLU  158      18.442  51.733  29.306  1.00 61.07      H31H C
ATOM   5550  CD  GLU  158      17.480  51.975  30.436  1.00 61.97      H31H C
ATOM   5551  OE1 GLU  158      17.604  53.037  31.095  1.00 62.07      H31H O
ATOM   5552  OE2 GLU  158      16.611  51.105  30.668  1.00 61.87      H31H O
ATOM   5553  C   GLU  158      21.266  54.330  29.781  1.00 59.69      H31H C
ATOM   5554  O   GLU  158      22.245  54.482  29.057  1.00 60.37      H31H O
ATOM   5555  N   PRO  159      21.315  54.619  31.091  1.00 58.97      H31H N
ATOM   5556  CD  PRO  159      22.618  54.767  31.768  1.00 59.60      H31H C
ATOM   5557  CA  PRO  159      20.205  54.718  32.051  1.00 58.30      H31H C
ATOM   5558  CB  PRO  159      20.813  54.145  33.319  1.00 60.20      H31H C
ATOM   5559  CG  PRO  159      22.263  54.657  33.248  1.00 60.02      H31H C
ATOM   5560  C   PRO  159      19.769  56.184  32.257  1.00 56.56      H31H C
ATOM   5561  O   PRO  159      20.471  57.112  31.838  1.00 55.30      H31H O
ATOM   5562  N   VAL  160      18.630  56.394  32.913  1.00 55.04      H31H N
ATOM   5563  CA  VAL  160      18.411  57.644  33.649  1.00 54.39      H31H C
ATOM   5564  CB  VAL  160      16.999  58.228  33.447  1.00 55.26      H31H C
ATOM   5565  CG1 VAL  160      16.883  58.885  32.090  1.00 58.59      H31H C
ATOM   5566  CG2 VAL  160      15.970  57.133  33.612  1.00 55.92      H31H C
ATOM   5567  C   VAL  160      18.552  57.384  35.131  1.00 53.67      H31H C
ATOM   5568  O   VAL  160      18.305  56.277  35.607  1.00 53.08      H31H O
ATOM   5569  N   THR  161      18.933  58.402  35.878  1.00 50.80      H31H N
ATOM   5570  CA  THR  161      18.797  58.269  37.305  1.00 49.44      H31H C
ATOM   5571  CB  THR  161      20.164  58.345  37.983  1.00 49.51      H31H C
ATOM   5572  OG1 THR  161      20.751  59.632  37.771  1.00 50.02      H31H O
ATOM   5573  CG2 THR  161      21.073  57.297  37.382  1.00 50.69      H31H C
ATOM   5574  C   THR  161      17.836  59.318  37.839  1.00 49.75      H31H C
ATOM   5575  O   THR  161      17.912  60.497  37.492  1.00 49.46      H31H O
ATOM   5576  N   VAL  162      16.900  58.867  38.662  1.00 49.63      H31H N
ATOM   5577  CA  VAL  162      15.885  59.750  39.218  1.00 48.46      H31H C
ATOM   5578  CB  VAL  162      14.470  59.172  39.007  1.00 50.10      H31H C
ATOM   5579  CG1 VAL  162      13.426  60.152  39.528  1.00 51.21      H31H C
ATOM   5580  CG2 VAL  162      14.253  58.865  37.527  1.00 49.13      H31H C
ATOM   5581  C   VAL  162      16.123  59.923  40.707  1.00 46.96      H31H C
ATOM   5582  O   VAL  162      16.495  58.988  41.399  1.00 44.46      H31H O
ATOM   5583  N   SER  163      15.909  61.131  41.196  1.00 47.63      H31H N
ATOM   5584  CA  SER  163      16.055  61.397  42.619  1.00 47.37      H31H C
ATOM   5585  CB  SER  163      17.421  62.010  42.892  1.00 45.40      H31H C
ATOM   5586  OG  SER  163      17.530  62.317  44.262  1.00 47.31      H31H O
ATOM   5587  C   SER  163      14.966  62.336  43.125  1.00 46.40      H31H C
ATOM   5588  O   SER  163      14.323  63.032  42.339  1.00 47.13      H31H O
ATOM   5589  N   TRP  164      14.754  62.361  44.435  1.00 44.44      H31H N
ATOM   5590  CA  TRP  164      13.855  63.359  45.007  1.00 42.49      H31H C
ATOM   5591  CB  TRP  164      12.660  62.675  45.676  1.00 36.70      H31H C
ATOM   5592  CG  TRP  164      11.840  61.877  44.694  1.00 34.26      H31H C
ATOM   5593  CD2 TRP  164      10.677  62.318  43.979  1.00 34.05      H31H C
ATOM   5594  CE2 TRP  164      10.229  61.228  43.192  1.00 34.15      H31H C
ATOM   5595  CE3 TRP  164       9.969  63.528  43.925  1.00 32.87      H31H C
ATOM   5596  CD1 TRP  164      12.045  60.576  44.315  1.00 33.54      H31H C
ATOM   5597  NE1 TRP  164      11.082  60.179  43.416  1.00 30.36      H31H N
ATOM   5598  CZ2 TRP  164       9.103  61.317  42.362  1.00 33.86      H31H C
ATOM   5599  CZ3 TRP  164       8.855  63.613  43.102  1.00 32.86      H31H C
ATOM   5600  CH2 TRP  164       8.432  62.512  42.331  1.00 34.03      H31H C
ATOM   5601  C   TRP  164      14.559  64.302  45.981  1.00 43.04      H31H C
ATOM   5602  O   TRP  164      15.408  63.894  46.783  1.00 41.69      H31H O
ATOM   5603  N   ASN  165      14.211  65.580  45.882  1.00 44.35      H31H N
ATOM   5604  CA  ASN  165      14.805  66.593  46.735  1.00 43.74      H31H C
ATOM   5605  CB  ASN  165      14.254  66.453  48.145  1.00 45.04      H31H C
ATOM   5606  CG  ASN  165      12.780  66.757  48.205  1.00 46.52      H31H C
ATOM   5607  OD1 ASN  165      12.330  67.728  47.603  1.00 49.82      H31H O
ATOM   5608  ND2 ASN  165      12.016  65.933  48.920  1.00 45.08      H31H N
ATOM   5609  C   ASN  165      16.320  66.473  46.728  1.00 43.80      H31H C
ATOM   5610  O   ASN  165      16.996  66.852  47.687  1.00 43.40      H31H O
ATOM   5611  N   SER  166      16.848  65.939  45.632  1.00 43.57      H31H N
ATOM   5612  CA  SER  166      18.277  66.007  45.387  1.00 44.05      H31H C
ATOM   5613  CB  SER  166      18.802  67.385  45.778  1.00 44.33      H31H C
ATOM   5614  OG  SER  166      18.185  68.364  44.978  1.00 48.35      H31H O
ATOM   5615  C   SER  166      19.030  64.947  46.164  1.00 42.94      H31H C
ATOM   5616  O   SER  166      20.245  65.039  46.326  1.00 41.74      H31H O
ATOM   5617  N   GLY  167      18.301  63.952  46.655  1.00 42.43      H31H N
ATOM   5618  CA  GLY  167      18.929  62.897  47.418  1.00 41.74      H31H C
ATOM   5619  C   GLY  167      18.292  62.682  48.772  1.00 42.53      H31H C
ATOM   5620  O   GLY  167      18.144  61.533  49.209  1.00 43.39      H31H O
ATOM   5621  N   ALA  168      17.896  63.769  49.436  1.00 42.33      H31H N
ATOM   5622  CA  ALA  168      17.324  63.656  50.778  1.00 40.60      H31H C
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ATOM   5623  CB  ALA  168      17.054  65.021  51.346  1.00 39.45      H31H C
ATOM   5624  C   ALA  168      16.061  62.799  50.846  1.00 39.62      H31H C
ATOM   5625  O   ALA  168      15.870  62.080  51.809  1.00 39.68      H31H O
ATOM   5626  N   LEU  169      15.204  62.846  49.830  1.00 39.52      H31H N
ATOM   5627  CA  LEU  169      13.955  62.089  49.897  1.00 40.32      H31H C
ATOM   5628  CB  LEU  169      12.848  62.777  49.076  1.00 38.82      H31H C
ATOM   5629  CG  LEU  169      11.506  62.016  49.118  1.00 38.57      H31H C
ATOM   5630  CD1 LEU  169      11.201  61.626  50.544  1.00 36.39      H31H C
ATOM   5631  CD2 LEU  169      10.372  62.854  48.547  1.00 38.11      H31H C
ATOM   5632  C   LEU  169      14.109  60.636  49.437  1.00 42.25      H31H C
ATOM   5633  O   LEU  169      13.874  60.301  48.268  1.00 41.44      H31H O
ATOM   5634  N   THR  170      14.479  59.759  50.363  1.00 44.70      H31H N
ATOM   5635  CA  THR  170      14.772  58.391  49.961  1.00 46.53      H31H C
ATOM   5636  CB  THR  170      16.187  57.944  50.439  1.00 45.23      H31H C
ATOM   5637  OG1 THR  170      16.368  58.245  51.831  1.00 46.22      H31H O
ATOM   5638  CG2 THR  170      17.262  58.664  49.625  1.00 45.00      H31H C
ATOM   5639  C   THR  170      13.731  57.367  50.373  1.00 47.49      H31H C
ATOM   5640  O   THR  170      13.345  56.528  49.568  1.00 49.33      H31H O
ATOM   5641  N   SER  171      13.250  57.431  51.604  1.00 48.12      H31H N
ATOM   5642  CA  SER  171      12.273  56.440  52.035  1.00 49.02      H31H C
ATOM   5643  CB  SER  171      11.928  56.639  53.502  1.00 50.34      H31H C
ATOM   5644  OG  SER  171      11.290  57.891  53.670  1.00 49.96      H31H O
ATOM   5645  C   SER  171      11.005  56.580  51.206  1.00 48.93      H31H C
ATOM   5646  O   SER  171      10.606  57.690  50.859  1.00 50.01      H31H O
ATOM   5647  N   GLY  172      10.370  55.458  50.887  1.00 48.36      H31H N
ATOM   5648  CA  GLY  172       9.101  55.513  50.184  1.00 46.99      H31H C
ATOM   5649  C   GLY  172       9.206  55.745  48.687  1.00 45.95      H31H C
ATOM   5650  O   GLY  172       8.187  55.845  48.015  1.00 46.41      H31H O
ATOM   5651  N   VAL  173      10.430  55.822  48.168  1.00 45.18      H31H N
ATOM   5652  CA  VAL  173      10.683  56.062  46.748  1.00 44.79      H31H C
ATOM   5653  CB  VAL  173      11.999  56.839  46.546  1.00 43.99      H31H C
ATOM   5654  CG1 VAL  173      12.280  56.991  45.068  1.00 43.36      H31H C
ATOM   5655  CG2 VAL  173      11.933  58.192  47.224  1.00 45.03      H31H C
ATOM   5656  C   VAL  173      10.837  54.765  45.970  1.00 46.04      H31H C
ATOM   5657  O   VAL  173      11.828  54.070  46.157  1.00 46.61      H31H O
ATOM   5658  N   HIS  174       9.899  54.424  45.091  1.00 48.02      H31H N
ATOM   5659  CA  HIS  174      10.185  53.321  44.167  1.00 50.67      H31H C
ATOM   5660  CB  HIS  174       9.160  52.188  44.299  1.00 56.04      H31H C
ATOM   5661  CG  HIS  174       9.618  50.887  43.707  1.00 64.33      H31H C
ATOM   5662  CD2 HIS  174      10.847  50.313  43.652  1.00 67.01      H31H C
ATOM   5663  ND1 HIS  174       8.755  49.998  43.097  1.00 67.38      H31H N
ATOM   5664  CE1 HIS  174       9.432  48.933  42.694  1.00 67.43      H31H C
ATOM   5665  NE2 HIS  174      10.702  49.099  43.019  1.00 68.12      H31H N
ATOM   5666  C   HIS  174      10.243  53.765  42.715  1.00 48.63      H31H C
ATOM   5667  O   HIS  174       9.222  54.087  42.110  1.00 48.68      H31H O
ATOM   5668  N   THR  175      11.450  53.771  42.167  1.00 46.86      H31H N
ATOM   5669  CA  THR  175      11.689  54.015  40.747  1.00 45.90      H31H C
ATOM   5670  CB  THR  175      13.096  54.614  40.559  1.00 45.07      H31H C
ATOM   5671  OG1 THR  175      13.205  55.827  41.317  1.00 42.71      H31H O
ATOM   5672  CG2 THR  175      13.383  54.873  39.077  1.00 44.22      H31H C
ATOM   5673  C   THR  175      11.608  52.702  39.946  1.00 45.53      H31H C
ATOM   5674  O   THR  175      12.380  51.769  40.193  1.00 44.10      H31H O
ATOM   5675  N   PHE  176      10.686  52.630  38.991  1.00 45.00      H31H N
ATOM   5676  CA  PHE  176      10.489  51.395  38.236  1.00 47.18      H31H C
ATOM   5677  CB  PHE  176       9.036  51.253  37.827  1.00 46.51      H31H C
ATOM   5678  CG  PHE  176       8.102  51.087  38.986  1.00 48.17      H31H C
ATOM   5679  CD1 PHE  176       7.654  52.191  39.694  1.00 45.97      H31H C
ATOM   5680  CD2 PHE  176       7.647  49.827  39.353  1.00 47.11      H31H C
ATOM   5681  CE1 PHE  176       6.771  52.039  40.738  1.00 45.93      H31H C
ATOM   5682  CE2 PHE  176       6.762  49.675  40.400  1.00 46.13      H31H C
ATOM   5683  CZ  PHE  176       6.325  50.781  41.090  1.00 46.30      H31H C
ATOM   5684  C   PHE  176      11.364  51.265  36.999  1.00 48.64      H31H C
ATOM   5685  O   PHE  176      11.760  52.261  36.394  1.00 48.01      H31H O
ATOM   5686  N   PRO  177      11.688  50.013  36.613  1.00 48.62      H31H N
ATOM   5687  CD  PRO  177      11.330  48.782  37.338  1.00 50.33      H31H C
ATOM   5688  CA  PRO  177      12.573  49.722  35.474  1.00 49.81      H31H C
ATOM   5689  CB  PRO  177      12.832  48.216  35.590  1.00 49.25      H31H C
ATOM   5690  CG  PRO  177      12.471  47.872  37.005  1.00 49.07      H31H C
ATOM   5691  C   PRO  177      11.898  50.093  34.157  1.00 48.15      H31H C
ATOM   5692  O   PRO  177      10.692  49.864  33.977  1.00 44.95      H31H O
ATOM   5693  N   ALA  178      12.681  50.671  33.250  1.00 47.67      H31H N
ATOM   5694  CA  ALA  178      12.133  51.303  32.055  1.00 49.62      H31H C
ATOM   5695  CB  ALA  178      13.218  52.103  31.354  1.00 50.13      H31H C
ATOM   5696  C   ALA  178      11.530  50.298  31.087  1.00 50.13      H31H C
ATOM   5697  O   ALA  178      11.955  49.153  31.023  1.00 50.26      H31H O
ATOM   5698  N   VAL  179      10.538  50.728  30.325  1.00 50.60      H31H N
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ATOM   5699  CA  VAL  179      10.123  49.941  29.181  1.00 52.63      H31H C
ATOM   5700  CB  VAL  179       8.585  49.921  29.017  1.00 49.49      H31H C
ATOM   5701  CG1 VAL  179       8.075  51.264  28.523  1.00 47.79      H31H C
ATOM   5702  CG2 VAL  179       8.204  48.828  28.057  1.00 48.76      H31H C
ATOM   5703  C   VAL  179      10.760  50.485  27.890  1.00 57.03      H31H C
ATOM   5704  O   VAL  179      11.205  51.639  27.820  1.00 55.93      H31H O
ATOM   5705  N   LEU  180      10.824  49.625  26.880  1.00 61.40      H31H N
ATOM   5706  CA  LEU  180      11.157  50.033  25.528  1.00 63.99      H31H C
ATOM   5707  CB  LEU  180      12.042  48.976  24.878  1.00 61.84      H31H C
ATOM   5708  CG  LEU  180      13.014  49.469  23.813  1.00 60.90      H31H C
ATOM   5709  CD1 LEU  180      13.527  50.842  24.190  1.00 58.46      H31H C
ATOM   5710  CD2 LEU  180      14.172  48.482  23.684  1.00 60.70      H31H C
ATOM   5711  C   LEU  180       9.829  50.137  24.788  1.00 67.05      H31H C
ATOM   5712  O   LEU  180       9.032  49.200  24.813  1.00 68.83      H31H O
ATOM   5713  N   GLN  181       9.576  51.281  24.158  1.00 69.86      H31H N
ATOM   5714  CA  GLN  181       8.376  51.441  23.341  1.00 71.70      H31H C
ATOM   5715  CB  GLN  181       7.882  52.898  23.384  1.00 74.68      H31H C
ATOM   5716  CG  GLN  181       7.427  53.378  24.772  1.00 79.74      H31H C
ATOM   5717  CD  GLN  181       7.670  54.877  25.014  1.00 83.20      H31H C
ATOM   5718  OE1 GLN  181       6.731  55.643  25.273  1.00 85.51      H31H O
ATOM   5719  NE2 GLN  181       8.933  55.293  24.938  1.00 84.18      H31H N
ATOM   5720  C   GLN  181       8.741  51.039  21.912  1.00 72.09      H31H C
ATOM   5721  O   GLN  181       9.930  50.913  21.574  1.00 70.09      H31H O
ATOM   5722  N   SER  182       7.723  50.830  21.080  1.00 72.37      H31H N
ATOM   5723  CA  SER  182       7.937  50.423  19.694  1.00 72.49      H31H C
ATOM   5724  CB  SER  182       6.599  50.335  18.967  1.00 71.69      H31H C
ATOM   5725  OG  SER  182       5.733  49.438  19.639  1.00 72.82      H31H O
ATOM   5726  C   SER  182       8.853  51.407  18.976  1.00 72.06      H31H C
ATOM   5727  O   SER  182       9.297  51.164  17.855  1.00 73.81      H31H O
ATOM   5728  N   SER  183       9.131  52.519  19.640  1.00 69.30      H31H N
ATOM   5729  CA  SER  183       9.965  53.554  19.076  1.00 67.21      H31H C
ATOM   5730  CB  SER  183       9.624  54.890  19.735  1.00 69.40      H31H C
ATOM   5731  OG  SER  183      10.483  55.921  19.280  1.00 71.75      H31H O
ATOM   5732  C   SER  183      11.445  53.239  19.269  1.00 65.60      H31H C
ATOM   5733  O   SER  183      12.305  53.765  18.552  1.00 64.41      H31H O
ATOM   5734  N   GLY  184      11.747  52.386  20.245  1.00 64.00      H31H N
ATOM   5735  CA  GLY  184      13.137  52.179  20.626  1.00 62.60      H31H C
ATOM   5736  C   GLY  184      13.634  53.272  21.562  1.00 61.18      H31H C
ATOM   5737  O   GLY  184      14.828  53.376  21.850  1.00 60.60      H31H O
ATOM   5738  N   LEU  185      12.703  54.097  22.030  1.00 59.98      H31H N
ATOM   5739  CA  LEU  185      12.987  55.063  23.079  1.00 59.22      H31H C
ATOM   5740  CB  LEU  185      12.357  56.422  22.744  1.00 59.91      H31H C
ATOM   5741  CG  LEU  185      12.913  57.128  21.502  1.00 59.10      H31H C
ATOM   5742  CD1 LEU  185      12.278  58.502  21.353  1.00 57.09      H31H C
ATOM   5743  CD2 LEU  185      14.431  57.239  21.621  1.00 57.14      H31H C
ATOM   5744  C   LEU  185      12.398  54.522  24.372  1.00 58.54      H31H C
ATOM   5745  O   LEU  185      11.390  53.805  24.343  1.00 58.03      H31H O
ATOM   5746  N   TYR  186      13.030  54.861  25.495  1.00 56.77      H31H N
ATOM   5747  CA  TYR  186      12.629  54.334  26.792  1.00 54.56      H31H C
ATOM   5748  CB  TYR  186      13.853  54.115  27.678  1.00 53.50      H31H C
ATOM   5749  CG  TYR  186      14.782  53.017  27.218  1.00 53.54      H31H C
ATOM   5750  CD1 TYR  186      14.423  51.672  27.341  1.00 53.96      H31H C
ATOM   5751  CE1 TYR  186      15.281  50.655  26.928  1.00 53.54      H31H C
ATOM   5752  CD2 TYR  186      16.023  53.319  26.673  1.00 52.95      H31H C
ATOM   5753  CE2 TYR  186      16.885  52.317  26.259  1.00 55.74      H31H C
ATOM   5754  CZ  TYR  186      16.509  50.987  26.386  1.00 54.83      H31H C
ATOM   5755  OH  TYR  186      17.366  50.006  25.944  1.00 54.90      H31H O
ATOM   5756  C   TYR  186      11.663  55.249  27.526  1.00 53.17      H31H C
ATOM   5757  O   TYR  186      11.697  56.463  27.374  1.00 55.58      H31H O
ATOM   5758  N   SER  187      10.798  54.656  28.331  1.00 50.88      H31H N
ATOM   5759  CA  SER  187      10.108  55.397  29.376  1.00 49.39      H31H C
ATOM   5760  CB  SER  187       8.619  55.528  29.057  1.00 48.12      H31H C
ATOM   5761  OG  SER  187       8.416  56.389  27.956  1.00 49.32      H31H O
ATOM   5762  C   SER  187      10.278  54.665  30.699  1.00 48.74      H31H C
ATOM   5763  O   SER  187      10.304  53.432  30.741  1.00 49.37      H31H O
ATOM   5764  N   LEU  188      10.408  55.421  31.779  1.00 46.61      H31H N
ATOM   5765  CA  LEU  188      10.223  54.852  33.099  1.00 45.05      H31H C
ATOM   5766  CB  LEU  188      11.572  54.451  33.708  1.00 41.87      H31H C
ATOM   5767  CG  LEU  188      12.446  55.532  34.348  1.00 41.43      H31H C
ATOM   5768  CD1 LEU  188      11.988  55.808  35.773  1.00 41.51      H31H C
ATOM   5769  CD2 LEU  188      13.876  55.058  34.363  1.00 40.21      H31H C
ATOM   5770  C   LEU  188       9.549  55.917  33.943  1.00 44.78      H31H C
ATOM   5771  O   LEU  188       9.594  57.093  33.599  1.00 44.93      H31H O
ATOM   5772  N   SER  189       8.920  55.509  35.038  1.00 44.18      H31H N
ATOM   5773  CA  SER  189       8.382  56.461  35.993  1.00 43.74      H31H C
ATOM   5774  CB  SER  189       6.857  56.474  35.905  1.00 42.81      H31H C
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ATOM   5775  OG  SER   189       6.384  55.250  35.391  1.00 40.88      H31H O
ATOM   5776  C   SER   189       8.835  56.138  37.416  1.00 44.62      H31H C
ATOM   5777  O   SER   189       9.054  54.978  37.758  1.00 44.06      H31H O
ATOM   5778  N   SER   190       8.986  57.175  38.235  1.00 45.13      H31H N
ATOM   5779  CA  SER   190       9.349  57.004  39.637  1.00 47.28      H31H C
ATOM   5780  CB  SER   190      10.651  57.759  39.910  1.00 47.70      H31H C
ATOM   5781  OG  SER   190      10.959  57.794  41.291  1.00 51.62      H31H O
ATOM   5782  C   SER   190       8.228  57.514  40.559  1.00 48.63      H31H C
ATOM   5783  O   SER   190       7.793  58.654  40.449  1.00 49.40      H31H O
ATOM   5784  N   VAL   191       7.749  56.669  41.460  1.00 48.61      H31H N
ATOM   5785  CA  VAL   191       6.716  57.091  42.404  1.00 48.08      H31H C
ATOM   5786  CB  VAL   191       5.628  56.022  42.579  1.00 48.63      H31H C
ATOM   5787  CG1 VAL   191       4.361  56.655  43.120  1.00 49.16      H31H C
ATOM   5788  CG2 VAL   191       5.378  55.322  41.276  1.00 50.66      H31H C
ATOM   5789  C   VAL   191       7.344  57.302  43.770  1.00 48.14      H31H C
ATOM   5790  O   VAL   191       8.455  56.846  44.032  1.00 48.84      H31H O
ATOM   5791  N   VAL   192       6.625  57.980  44.649  1.00 47.74      H31H N
ATOM   5792  CA  VAL   192       7.071  58.124  46.020  1.00 49.09      H31H C
ATOM   5793  CB  VAL   192       7.993  59.347  46.168  1.00 47.37      H31H C
ATOM   5794  CG1 VAL   192       7.188  60.616  46.033  1.00 49.41      H31H C
ATOM   5795  CG2 VAL   192       8.716  59.299  47.494  1.00 48.43      H31H C
ATOM   5796  C   VAL   192       5.833  58.285  46.893  1.00 51.29      H31H C
ATOM   5797  O   VAL   192       4.869  58.925  46.491  1.00 52.06      H31H O
ATOM   5798  N   THR   193       5.845  57.683  48.076  1.00 53.99      H31H N
ATOM   5799  CA  THR   193       4.707  57.791  48.978  1.00 55.72      H31H C
ATOM   5800  CB  THR   193       4.442  56.475  49.712  1.00 54.82      H31H C
ATOM   5801  OG1 THR   193       4.299  55.412  48.762  1.00 52.78      H31H O
ATOM   5802  CG2 THR   193       3.174  56.593  50.529  1.00 53.19      H31H C
ATOM   5803  C   THR   193       4.949  58.865  50.024  1.00 57.60      H31H C
ATOM   5804  O   THR   193       6.014  58.915  50.638  1.00 60.19      H31H O
ATOM   5805  N   VAL   194       3.951  59.718  50.223  1.00 59.12      H31H N
ATOM   5806  CA  VAL   194       4.007  60.758  51.244  1.00 59.31      H31H C
ATOM   5807  CB  VAL   194       4.182  62.149  50.614  1.00 57.34      H31H C
ATOM   5808  CG1 VAL   194       5.482  62.222  49.839  1.00 56.49      H31H C
ATOM   5809  CG2 VAL   194       3.001  62.443  49.714  1.00 53.69      H31H C
ATOM   5810  C   VAL   194       2.705  60.776  52.041  1.00 61.25      H31H C
ATOM   5811  O   VAL   194       1.692  60.235  51.604  1.00 61.92      H31H O
ATOM   5812  N   PRO   195       2.721  61.416  53.222  1.00 62.39      H31H N
ATOM   5813  CD  PRO   195       3.960  61.784  53.933  1.00 60.34      H31H C
ATOM   5814  CA  PRO   195       1.521  61.810  53.980  1.00 63.17      H31H C
ATOM   5815  CB  PRO   195       2.088  62.549  55.197  1.00 59.42      H31H C
ATOM   5816  CG  PRO   195       3.473  62.076  55.326  1.00 58.40      H31H C
ATOM   5817  C   PRO   195       0.575  62.718  53.182  1.00 64.78      H31H C
ATOM   5818  O   PRO   195       1.016  63.634  52.486  1.00 65.00      H31H O
ATOM   5819  N   SER   196      -0.725  62.476  53.297  1.00 65.72      H31H N
ATOM   5820  CA  SER   196      -1.705  63.386  52.714  1.00 66.61      H31H C
ATOM   5821  CB  SER   196      -3.117  62.826  52.895  1.00 65.85      H31H C
ATOM   5822  OG  SER   196      -3.210  61.527  52.356  1.00 61.78      H31H O
ATOM   5823  C   SER   196      -1.607  64.754  53.393  1.00 67.65      H31H C
ATOM   5824  O   SER   196      -1.704  65.795  52.746  1.00 68.06      H31H O
ATOM   5825  N   SER   197      -1.403  64.734  54.704  1.00 69.10      H31H N
ATOM   5826  CA  SER   197      -1.411  65.944  55.516  1.00 69.65      H31H C
ATOM   5827  CB  SER   197      -1.255  65.561  56.990  1.00 69.31      H31H C
ATOM   5828  OG  SER   197      -0.156  64.684  57.169  1.00 68.21      H31H O
ATOM   5829  C   SER   197      -0.329  66.959  55.130  1.00 70.07      H31H C
ATOM   5830  O   SER   197      -0.543  68.174  55.225  1.00 70.52      H31H O
ATOM   5831  N   SER   198       0.835  66.465  54.712  1.00 69.45      H31H N
ATOM   5832  CA  SER   198       1.959  67.342  54.405  1.00 68.99      H31H C
ATOM   5833  CB  SER   198       3.295  66.596  54.588  1.00 70.62      H31H C
ATOM   5834  OG  SER   198       3.418  65.476  53.730  1.00 73.17      H31H O
ATOM   5835  C   SER   198       1.855  67.925  52.996  1.00 68.67      H31H C
ATOM   5836  O   SER   198       2.640  68.798  52.610  1.00 66.31      H31H O
ATOM   5837  N   LEU   199       0.875  67.450  52.233  1.00 69.05      H31H N
ATOM   5838  CA  LEU   199       0.587  68.038  50.938  1.00 70.87      H31H C
ATOM   5839  CB  LEU   199      -0.469  67.219  50.205  1.00 68.03      H31H C
ATOM   5840  CG  LEU   199      -0.068  65.802  49.805  1.00 66.69      H31H C
ATOM   5841  CD1 LEU   199      -1.221  65.107  49.119  1.00 65.13      H31H C
ATOM   5842  CD2 LEU   199       1.127  65.864  48.884  1.00 66.64      H31H C
ATOM   5843  C   LEU   199       0.077  69.448  51.171  1.00 74.01      H31H C
ATOM   5844  O   LEU   199      -0.534  69.736  52.202  1.00 75.02      H31H O
ATOM   5845  N   GLY   200       0.331  70.335  50.224  1.00 76.20      H31H N
ATOM   5846  CA  GLY   200      -0.025  71.720  50.442  1.00 79.03      H31H C
ATOM   5847  C   GLY   200       1.110  72.503  51.069  1.00 81.18      H31H C
ATOM   5848  O   GLY   200       1.260  73.693  50.805  1.00 82.30      H31H O
ATOM   5849  N   THR   201       1.922  71.847  51.889  1.00 82.71      H31H N
ATOM   5850  CA  THR   201       2.984  72.552  52.591  1.00 83.47      H31H C
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ATOM   5851  CB  THR   201       2.869  72.334  54.093  1.00 82.12      H31H C
ATOM   5852  OG1 THR   201       2.774  70.932  54.358  1.00 82.06      H31H O
ATOM   5853  CG2 THR   201       1.643  73.031  54.632  1.00 80.62      H31H C
ATOM   5854  C   THR   201       4.377  72.143  52.142  1.00 84.13      H31H C
ATOM   5855  O   THR   201       5.191  72.988  51.766  1.00 86.17      H31H O
ATOM   5856  N   GLN   202       4.653  70.846  52.189  1.00 83.67      H31H N
ATOM   5857  CA  GLN   202       5.949  70.339  51.760  1.00 81.24      H31H C
ATOM   5858  CB  GLN   202       6.141  68.902  52.250  1.00 84.61      H31H C
ATOM   5859  CG  GLN   202       6.355  68.812  53.740  1.00 89.81      H31H C
ATOM   5860  CD  GLN   202       7.301  69.881  54.232  1.00 93.21      H31H C
ATOM   5861  OE1 GLN   202       6.995  70.603  55.178  1.00 95.82      H31H O
ATOM   5862  NE2 GLN   202       8.458  69.997  53.586  1.00 96.62      H31H N
ATOM   5863  C   GLN   202       6.013  70.393  50.246  1.00 76.65      H31H C
ATOM   5864  O   GLN   202       4.997  70.253  49.575  1.00 75.95      H31H O
ATOM   5865  N   THR   203       7.199  70.607  49.699  1.00 72.04      H31H N
ATOM   5866  CA  THR   203       7.326  70.634  48.253  1.00 67.97      H31H C
ATOM   5867  CB  THR   203       7.958  71.961  47.791  1.00 68.16      H31H C
ATOM   5868  OG1 THR   203       9.304  72.037  48.263  1.00 69.55      H31H O
ATOM   5869  CG2 THR   203       7.170  73.149  48.352  1.00 66.96      H31H C
ATOM   5870  C   THR   203       8.145  69.439  47.737  1.00 64.26      H31H C
ATOM   5871  O   THR   203       9.212  69.119  48.262  1.00 63.14      H31H O
ATOM   5872  N   TYR   204       7.623  68.769  46.713  1.00 60.03      H31H N
ATOM   5873  CA  TYR   204       8.261  67.567  46.183  1.00 56.87      H31H C
ATOM   5874  CB  TYR   204       7.262  66.406  46.201  1.00 56.87      H31H C
ATOM   5875  CG  TYR   204       6.884  66.022  47.605  1.00 58.37      H31H C
ATOM   5876  CD1 TYR   204       5.636  66.324  48.121  1.00 59.73      H31H C
ATOM   5877  CE1 TYR   204       5.318  66.035  49.436  1.00 60.84      H31H C
ATOM   5878  CD2 TYR   204       7.805  65.414  48.440  1.00 60.23      H31H C
ATOM   5879  CE2 TYR   204       7.500  65.119  49.749  1.00 60.88      H31H C
ATOM   5880  CZ  TYR   204       6.257  65.432  50.245  1.00 61.19      H31H C
ATOM   5881  OH  TYR   204       5.964  65.141  51.558  1.00 60.98      H31H O
ATOM   5882  C   TYR   204       8.844  67.751  44.774  1.00 54.04      H31H C
ATOM   5883  O   TYR   204       8.117  67.841  43.784  1.00 52.97      H31H O
ATOM   5884  N   ILE   205      10.167  67.806  44.693  1.00 50.55      H31H N
ATOM   5885  CA  ILE   205      10.831  67.982  43.415  1.00 48.02      H31H C
ATOM   5886  CB  ILE   205      11.880  69.126  43.485  1.00 43.92      H31H C
ATOM   5887  CG2 ILE   205      12.670  69.191  42.178  1.00 39.57      H31H C
ATOM   5888  CG1 ILE   205      11.171  70.449  43.801  1.00 40.24      H31H C
ATOM   5889  CD1 ILE   205      12.090  71.615  44.002  1.00 36.63      H31H C
ATOM   5890  C   ILE   205      11.511  66.685  43.017  1.00 48.10      H31H C
ATOM   5891  O   ILE   205      12.252  66.096  43.801  1.00 49.28      H31H O
ATOM   5892  N   CYS   206      11.256  66.234  41.801  1.00 47.41      H31H N
ATOM   5893  CA  CYS   206      11.926  65.042  41.313  1.00 47.33      H31H C
ATOM   5894  C   CYS   206      13.021  65.467  40.346  1.00 46.16      H31H C
ATOM   5895  O   CYS   206      12.751  66.190  39.395  1.00 46.16      H31H O
ATOM   5896  CB  CYS   206      10.905  64.116  40.637  1.00 48.70      H31H C
ATOM   5897  SG  CYS   206      10.705  64.310  38.841  1.00 49.42      H31H S
ATOM   5898  N   ASN   207      14.259  65.046  40.608  1.00 46.09      H31H N
ATOM   5899  CA  ASN   207      15.400  65.405  39.758  1.00 45.79      H31H C
ATOM   5900  CB  ASN   207      16.598  65.771  40.618  1.00 47.44      H31H C
ATOM   5901  CG  ASN   207      16.194  66.274  41.978  1.00 49.48      H31H C
ATOM   5902  OD1 ASN   207      15.873  65.481  42.884  1.00 49.54      H31H O
ATOM   5903  ND2 ASN   207      16.199  67.597  42.140  1.00 48.35      H31H N
ATOM   5904  C   ASN   207      15.794  64.256  38.841  1.00 45.19      H31H C
ATOM   5905  O   ASN   207      15.981  63.126  39.292  1.00 45.98      H31H O
ATOM   5906  N   VAL   208      15.920  64.545  37.552  1.00 44.59      H31H N
ATOM   5907  CA  VAL   208      16.179  63.499  36.579  1.00 44.44      H31H C
ATOM   5908  CB  VAL   208      15.061  63.395  35.565  1.00 42.93      H31H C
ATOM   5909  CG1 VAL   208      15.378  62.291  34.596  1.00 42.05      H31H C
ATOM   5910  CG2 VAL   208      13.733  63.145  36.275  1.00 42.37      H31H C
ATOM   5911  C   VAL   208      17.477  63.703  35.824  1.00 46.24      H31H C
ATOM   5912  O   VAL   208      17.649  64.664  35.076  1.00 46.31      H31H O
ATOM   5913  N   ASN   209      18.398  62.774  36.027  1.00 49.74      H31H N
ATOM   5914  CA  ASN   209      19.695  62.842  35.389  1.00 51.57      H31H C
ATOM   5915  CB  ASN   209      20.775  62.534  36.408  1.00 53.49      H31H C
ATOM   5916  CG  ASN   209      21.866  63.555  36.397  1.00 58.10      H31H C
ATOM   5917  OD1 ASN   209      22.623  63.663  35.425  1.00 61.93      H31H O
ATOM   5918  ND2 ASN   209      21.961  64.331  37.476  1.00 60.31      H31H N
ATOM   5919  C   ASN   209      19.758  61.854  34.233  1.00 53.30      H31H C
ATOM   5920  O   ASN   209      19.119  60.794  34.266  1.00 52.74      H31H O
ATOM   5921  N   HIS   210      20.521  62.213  33.208  1.00 55.96      H31H N
ATOM   5922  CA  HIS   210      20.682  61.371  32.027  1.00 60.39      H31H C
ATOM   5923  CB  HIS   210      19.506  61.586  31.075  1.00 57.95      H31H C
ATOM   5924  CG  HIS   210      19.554  60.737  29.841  1.00 57.46      H31H C
ATOM   5925  CD2 HIS   210      18.962  59.554  29.550  1.00 56.95      H31H C
ATOM   5926  ND1 HIS   210      20.240  61.111  28.705  1.00 56.62      H31H N
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ATOM   5927  CE1 HIS   210      20.064  60.196  27.768  1.00 56.04      H31H C
ATOM   5928  NE2 HIS   210      19.293  59.241  28.255  1.00 56.13      H31H N
ATOM   5929  C   HIS   210      21.989  61.732  31.332  1.00 64.05      H31H C
ATOM   5930  O   HIS   210      21.999  62.563  30.423  1.00 66.26      H31H O
ATOM   5931  N   LYS   211      23.088  61.105  31.759  1.00 67.42      H31H N
ATOM   5932  CA  LYS   211      24.422  61.500  31.308  1.00 71.12      H31H C
ATOM   5933  CB  LYS   211      25.493  60.800  32.148  1.00 73.47      H31H C
ATOM   5934  CG  LYS   211      25.650  61.391  33.537  1.00 78.05      H31H C
ATOM   5935  CD  LYS   211      26.676  60.635  34.371  1.00 83.09      H31H C
ATOM   5936  CE  LYS   211      26.518  60.963  35.851  1.00 87.25      H31H C
ATOM   5937  NZ  LYS   211      25.078  60.948  36.299  1.00 92.55      H31H N
ATOM   5938  C   LYS   211      24.717  61.288  29.821  1.00 71.44      H31H C
ATOM   5939  O   LYS   211      25.602  61.954  29.265  1.00 70.88      H31H O
ATOM   5940  N   PRO   212      23.988  60.363  29.161  1.00 70.66      H31H N
ATOM   5941  CD  PRO   212      23.075  59.370  29.752  1.00 68.67      H31H C
ATOM   5942  CA  PRO   212      24.151  60.136  27.723  1.00 70.83      H31H C
ATOM   5943  CB  PRO   212      23.177  59.003  27.425  1.00 68.87      H31H C
ATOM   5944  CG  PRO   212      23.014  58.308  28.708  1.00 67.41      H31H C
ATOM   5945  C   PRO   212      23.856  61.369  26.881  1.00 71.39      H31H C
ATOM   5946  O   PRO   212      24.549  61.634  25.897  1.00 73.26      H31H O
ATOM   5947  N   SER   213      22.831  62.124  27.268  1.00 69.78      H31H N
ATOM   5948  CA  SER   213      22.506  63.363  26.573  1.00 67.25      H31H C
ATOM   5949  CB  SER   213      20.998  63.448  26.316  1.00 68.21      H31H C
ATOM   5950  OG  SER   213      20.260  63.475  27.523  1.00 69.83      H31H O
ATOM   5951  C   SER   213      22.976  64.603  27.333  1.00 64.95      H31H C
ATOM   5952  O   SER   213      22.739  65.733  26.895  1.00 64.30      H31H O
ATOM   5953  N   ASN   214      23.651  64.380  28.458  1.00 63.80      H31H N
ATOM   5954  CA  ASN   214      23.966  65.445  29.405  1.00 62.78      H31H C
ATOM   5955  CB  ASN   214      25.135  66.282  28.898  1.00 64.09      H31H C
ATOM   5956  CG  ASN   214      26.432  65.517  28.892  1.00 66.41      H31H C
ATOM   5957  OD1 ASN   214      26.678  64.705  28.003  1.00 68.49      H31H O
ATOM   5958  ND2 ASN   214      27.276  65.771  29.886  1.00 68.13      H31H N
ATOM   5959  C   ASN   214      22.752  66.338  29.632  1.00 60.83      H31H C
ATOM   5960  O   ASN   214      22.733  67.513  29.258  1.00 59.28      H31H O
ATOM   5961  N   THR   215      21.732  65.767  30.257  1.00 58.26      H31H N
ATOM   5962  CA  THR   215      20.473  66.471  30.437  1.00 55.62      H31H C
ATOM   5963  CB  THR   215      19.412  65.954  29.444  1.00 52.20      H31H C
ATOM   5964  OG1 THR   215      19.909  66.088  28.112  1.00 47.16      H31H O
ATOM   5965  CG2 THR   215      18.137  66.741  29.585  1.00 49.57      H31H C
ATOM   5966  C   THR   215      19.937  66.288  31.855  1.00 54.60      H31H C
ATOM   5967  O   THR   215      19.390  65.228  32.174  1.00 57.16      H31H O
ATOM   5968  N   LYS   216      20.069  67.298  32.710  1.00 51.53      H31H N
ATOM   5969  CA  LYS   216      19.366  67.224  33.976  1.00 49.41      H31H C
ATOM   5970  CB  LYS   216      20.251  67.745  35.109  1.00 47.56      H31H C
ATOM   5971  CG  LYS   216      19.748  67.346  36.505  1.00 51.25      H31H C
ATOM   5972  CD  LYS   216      20.613  67.953  37.610  1.00 56.11      H31H C
ATOM   5973  CE  LYS   216      19.792  68.452  38.809  1.00 59.03      H31H C
ATOM   5974  NZ  LYS   216      19.922  69.939  39.020  1.00 66.78      H31H N
ATOM   5975  C   LYS   216      18.032  67.994  33.913  1.00 47.52      H31H C
ATOM   5976  O   LYS   216      17.947  69.086  33.343  1.00 47.37      H31H O
ATOM   5977  N   VAL   217      16.986  67.399  34.475  1.00 45.17      H31H N
ATOM   5978  CA  VAL   217      15.675  68.029  34.495  1.00 45.48      H31H C
ATOM   5979  CB  VAL   217      14.705  67.359  33.504  1.00 42.90      H31H C
ATOM   5980  CG1 VAL   217      13.382  68.094  33.502  1.00 43.01      H31H C
ATOM   5981  CG2 VAL   217      15.291  67.349  32.126  1.00 42.04      H31H C
ATOM   5982  C   VAL   217      15.033  67.935  35.874  1.00 45.53      H31H C
ATOM   5983  O   VAL   217      14.689  66.837  36.325  1.00 44.46      H31H O
ATOM   5984  N   ASP   218      14.844  69.085  36.522  1.00 45.13      H31H N
ATOM   5985  CA  ASP   218      14.068  69.157  37.765  1.00 44.22      H31H C
ATOM   5986  CB  ASP   218      14.646  70.233  38.697  1.00 45.01      H31H C
ATOM   5987  CG  ASP   218      16.039  69.896  39.177  1.00 46.69      H31H C
ATOM   5988  OD1 ASP   218      16.230  68.770  39.690  1.00 48.07      H31H O
ATOM   5989  OD2 ASP   218      16.942  70.752  39.040  1.00 47.24      H31H O
ATOM   5990  C   ASP   218      12.609  69.485  37.468  1.00 41.82      H31H C
ATOM   5991  O   ASP   218      12.325  70.438  36.759  1.00 41.41      H31H O
ATOM   5992  N   LYS   219      11.688  68.690  38.000  1.00 41.58      H31H N
ATOM   5993  CA  LYS   219      10.261  69.006  37.898  1.00 43.18      H31H C
ATOM   5994  CB  LYS   219       9.546  68.005  36.983  1.00 42.71      H31H C
ATOM   5995  CG  LYS   219       8.209  68.494  36.454  1.00 42.46      H31H C
ATOM   5996  CD  LYS   219       8.401  69.794  35.667  1.00 46.00      H31H C
ATOM   5997  CE  LYS   219       7.112  70.264  34.971  1.00 46.61      H31H C
ATOM   5998  NZ  LYS   219       7.108  69.969  33.497  1.00 46.37      H31H N
ATOM   5999  C   LYS   219       9.612  68.982  39.279  1.00 44.12      H31H C
ATOM   6000  O   LYS   219       9.785  68.027  40.035  1.00 43.32      H31H O
ATOM   6001  N   LYS   220       8.879  70.037  39.616  1.00 46.31      H31H N
ATOM   6002  CA  LYS   220       8.173  70.073  40.887  1.00 51.36      H31H C
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ATOM   6003  CB  LYS   220       8.004  71.512  41.356  1.00 51.83      H31H C
ATOM   6004  CG  LYS   220       7.136  71.684  42.587  1.00 53.30      H31H C
ATOM   6005  CD  LYS   220       7.297  73.099  43.134  1.00 55.65      H31H C
ATOM   6006  CE  LYS   220       6.414  73.349  44.343  1.00 58.38      H31H C
ATOM   6007  NZ  LYS   220       6.792  74.612  45.042  1.00 61.74      H31H N
ATOM   6008  C   LYS   220       6.810  69.413  40.731  1.00 55.52      H31H C
ATOM   6009  O   LYS   220       6.127  69.592  39.727  1.00 56.17      H31H O
ATOM   6010  N   VAL   221       6.425  68.622  41.717  1.00 59.39      H31H N
ATOM   6011  CA  VAL   221       5.191  67.885  41.620  1.00 63.66      H31H C
ATOM   6012  CB  VAL   221       5.439  66.388  41.823  1.00 64.08      H31H C
ATOM   6013  CG1 VAL   221       4.117  65.618  41.778  1.00 62.71      H31H C
ATOM   6014  CG2 VAL   221       6.391  65.892  40.743  1.00 61.51      H31H C
ATOM   6015  C   VAL   221       4.234  68.410  42.661  1.00 67.49      H31H C
ATOM   6016  O   VAL   221       4.508  68.365  43.852  1.00 67.95      H31H O
ATOM   6017  N   GLU   222       3.118  68.942  42.182  1.00 72.52      H31H N
ATOM   6018  CA  GLU   222       2.115  69.555  43.032  1.00 77.04      H31H C
ATOM   6019  CB  GLU   222       1.951  71.041  42.689  1.00 79.41      H31H C
ATOM   6020  CG  GLU   222       3.071  71.952  43.174  1.00 87.22      H31H C
ATOM   6021  CD  GLU   222       2.790  73.425  42.900  1.00 91.43      H31H C
ATOM   6022  OE1 GLU   222       3.133  74.277  43.750  1.00 95.60      H31H O
ATOM   6023  OE2 GLU   222       2.224  73.730  41.829  1.00 95.74      H31H O
ATOM   6024  C   GLU   222       0.793  68.843  42.802  1.00 79.22      H31H C
ATOM   6025  O   GLU   222       0.551  68.271  41.737  1.00 78.25      H31H O
ATOM   6026  N   PRO   223      -0.084  68.879  43.803  1.00 81.42      H31H N
ATOM   6027  CD  PRO   223       0.214  69.436  45.129  1.00 83.23      H31H C
ATOM   6028  CA  PRO   223      -1.433  68.318  43.734  1.00 83.45      H31H C
ATOM   6029  CB  PRO   223      -2.002  68.595  45.121  1.00 84.78      H31H C
ATOM   6030  CG  PRO   223      -0.805  68.783  45.992  1.00 85.56      H31H C
ATOM   6031  C   PRO   223      -2.261  68.981  42.635  1.00 84.25      H31H C
ATOM   6032  O   PRO   223      -1.940  70.080  42.185  1.00 82.72      H31H O
ATOM   6033  N   LYS   224      -3.332  68.310  42.221  1.00 85.68      H31H N
ATOM   6034  CA  LYS   224      -4.128  68.730  41.069  1.00 87.49      H31H C
ATOM   6035  CB  LYS   224      -4.799  67.507  40.432  1.00 87.94      H31H C
ATOM   6036  CG  LYS   224      -4.095  66.198  40.749  1.00 88.70      H31H C
ATOM   6037  CD  LYS   224      -4.345  65.129  39.692  1.00 90.62      H31H C
ATOM   6038  CE  LYS   224      -3.572  63.850  40.031  1.00 92.06      H31H C
ATOM   6039  NZ  LYS   224      -3.487  62.866  38.912  1.00 92.45      H31H N
ATOM   6040  C   LYS   224      -5.191  69.764  41.441  1.00 88.37      H31H C
ATOM   6041  O   LYS   224      -6.384  69.388  41.475  1.00 89.80      H31H O
ATOM   6042  OXT LYS   224      -4.825  70.932  41.701  1.00 89.87      H31H O
TER    6043      LYS   224                                              H31H
ATOM   6044  CB  SER     2      63.863  32.817   2.917  1.00 52.61      L21B C
ATOM   6045  OG  SER     2      65.036  32.750   2.112  1.00 56.46      L21B O
ATOM   6046  C   SER     2      63.296  30.542   1.965  1.00 51.89      L21B C
ATOM   6047  O   SER     2      62.911  29.519   2.538  1.00 49.06      L21B O
ATOM   6048  N   SER     2      61.635  31.805   3.365  1.00 50.71      L21B N
ATOM   6049  CA  SER     2      62.738  31.922   2.361  1.00 50.89      L21B C
ATOM   6050  N   ALA     3      64.199  30.533   0.985  1.00 56.94      L21B N
ATOM   6051  CA  ALA     3      64.675  29.305   0.362  1.00 57.67      L21B C
ATOM   6052  CB  ALA     3      65.526  29.649  -0.843  1.00 55.59      L21B C
ATOM   6053  C   ALA     3      65.454  28.390   1.309  1.00 57.11      L21B C
ATOM   6054  O   ALA     3      65.912  28.813   2.368  1.00 57.76      L21B O
ATOM   6055  N   LEU     4      65.585  27.125   0.922  1.00 51.91      L21B N
ATOM   6056  CA  LEU     4      66.411  26.170   1.654  1.00 50.60      L21B C
ATOM   6057  CB  LEU     4      65.999  24.735   1.303  1.00 49.68      L21B C
ATOM   6058  CG  LEU     4      64.497  24.436   1.262  1.00 46.57      L21B C
ATOM   6059  CD1 LEU     4      64.270  22.951   1.014  1.00 42.80      L21B C
ATOM   6060  CD2 LEU     4      63.852  24.877   2.561  1.00 45.01      L21B C
ATOM   6061  C   LEU     4      67.880  26.383   1.282  1.00 51.12      L21B C
ATOM   6062  O   LEU     4      68.178  26.834   0.185  1.00 51.19      L21B O
ATOM   6063  N   THR     5      68.791  26.045   2.191  1.00 53.04      L21B N
ATOM   6064  CA  THR     5      70.207  26.318   1.999  1.00 54.33      L21B C
ATOM   6065  CB  THR     5      70.858  26.820   3.300  1.00 55.17      L21B C
ATOM   6066  OG1 THR     5      70.095  27.914   3.834  1.00 56.53      L21B O
ATOM   6067  CG2 THR     5      72.293  27.267   3.037  1.00 54.92      L21B C
ATOM   6068  C   THR     5      70.958  25.072   1.561  1.00 55.20      L21B C
ATOM   6069  O   THR     5      71.062  24.107   2.315  1.00 53.92      L21B O
ATOM   6070  N   GLN     6      71.480  25.103   0.339  1.00 57.74      L21B N
ATOM   6071  CA  GLN     6      72.399  24.075  -0.142  1.00 60.09      L21B C
ATOM   6072  CB  GLN     6      71.997  23.595  -1.536  1.00 58.92      L21B C
ATOM   6073  CG  GLN     6      70.627  22.949  -1.646  1.00 57.25      L21B C
ATOM   6074  CD  GLN     6      70.367  22.370  -3.041  1.00 56.07      L21B C
ATOM   6075  OE1 GLN     6      69.373  22.697  -3.688  1.00 55.90      L21B O
ATOM   6076  NE2 GLN     6      71.266  21.508  -3.503  1.00 51.99      L21B N
ATOM   6077  C   GLN     6      73.798  24.676  -0.220  1.00 62.99      L21B C
ATOM   6078  O   GLN     6      73.962  25.893  -0.141  1.00 63.57      L21B O
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ATOM   6079  N   PRO     7      74.827  23.831  -0.364  1.00 65.06      L21B N
ATOM   6080  CD  PRO     7      74.858  22.407   0.006  1.00 66.69      L21B C
ATOM   6081  CA  PRO     7      76.150  24.319  -0.761  1.00 66.63      L21B C
ATOM   6082  CB  PRO     7      77.052  23.094  -0.600  1.00 67.18      L21B C
ATOM   6083  CG  PRO     7      76.305  22.179   0.307  1.00 68.34      L21B C
ATOM   6084  C   PRO     7      76.081  24.772  -2.212  1.00 66.86      L21B C
ATOM   6085  O   PRO     7      75.360  24.179  -3.001  1.00 67.36      L21B O
ATOM   6086  N   ALA     8      76.824  25.810  -2.575  1.00 67.52      L21B N
ATOM   6087  CA  ALA     8      76.860  26.225  -3.971  1.00 68.06      L21B C
ATOM   6088  CB  ALA     8      77.642  27.526  -4.121  1.00 70.77      L21B C
ATOM   6089  C   ALA     8      77.482  25.126  -4.831  1.00 68.63      L21B C
ATOM   6090  O   ALA     8      77.122  24.967  -5.993  1.00 67.08      L21B O
ATOM   6091  N   SER     9      78.413  24.364  -4.265  1.00 69.56      L21B N
ATOM   6092  CA  SER     9      78.988  23.232  -4.990  1.00 71.04      L21B C
ATOM   6093  CB  SER     9      80.051  23.718  -5.979  1.00 71.64      L21B C
ATOM   6094  OG  SER     9      81.060  24.455  -5.315  1.00 75.30      L21B O
ATOM   6095  C   SER     9      79.587  22.153  -4.083  1.00 69.92      L21B C
ATOM   6096  O   SER     9      79.840  22.389  -2.902  1.00 69.61      L21B O
ATOM   6097  N   VAL    10      79.771  20.963  -4.651  1.00 68.05      L21B N
ATOM   6098  CA  VAL    10      80.487  19.867  -4.009  1.00 67.25      L21B C
ATOM   6099  CB  VAL    10      79.553  18.805  -3.398  1.00 68.41      L21B C
ATOM   6100  CG1 VAL    10      78.759  19.393  -2.259  1.00 69.36      L21B C
ATOM   6101  CG2 VAL    10      78.639  18.242  -4.478  1.00 68.43      L21B C
ATOM   6102  C   VAL    10      81.273  19.173  -5.093  1.00 66.54      L21B C
ATOM   6103  O   VAL    10      80.874  19.177  -6.262  1.00 67.05      L21B O
ATOM   6104  N   SER    11      82.383  18.560  -4.701  1.00 65.07      L21B N
ATOM   6105  CA  SER    11      83.317  18.029  -5.670  1.00 63.23      L21B C
ATOM   6106  CB  SER    11      84.572  18.897  -5.687  1.00 61.31      L21B C
ATOM   6107  OG  SER    11      85.258  18.728  -6.908  1.00 63.07      L21B O
ATOM   6108  C   SER    11      83.683  16.584  -5.352  1.00 62.63      L21B C
ATOM   6109  O   SER    11      83.759  16.194  -4.184  1.00 62.08      L21B O
ATOM   6110  N   GLY    12      83.911  15.794  -6.397  1.00 61.55      L21B N
ATOM   6111  CA  GLY    12      84.362  14.427  -6.206  1.00 59.55      L21B C
ATOM   6112  C   GLY    12      84.904  13.767  -7.463  1.00 59.44      L21B C
ATOM   6113  O   GLY    12      84.533  14.127  -8.585  1.00 57.13      L21B O
ATOM   6114  N   SER    13      85.784  12.787  -7.256  1.00 60.89      L21B N
ATOM   6115  CA  SER    13      86.412  12.017  -8.334  1.00 61.13      L21B C
ATOM   6116  CB  SER    13      87.909  11.855  -8.050  1.00 61.04      L21B C
ATOM   6117  OG  SER    13      88.515  11.011  -9.010  1.00 60.21      L21B O
ATOM   6118  C   SER    13      85.759  10.646  -8.439  1.00 59.77      L21B C
ATOM   6119  O   SER    13      85.223  10.145  -7.463  1.00 59.25      L21B O
ATOM   6120  N   PRO    14      85.809  10.014  -9.621  1.00 59.99      L21B N
ATOM   6121  CD  PRO    14      86.598  10.379 -10.812  1.00 59.07      L21B C
ATOM   6122  CA  PRO    14      85.040   8.776  -9.823  1.00 62.35      L21B C
ATOM   6123  CB  PRO    14      85.579   8.235 -11.148  1.00 60.39      L21B C
ATOM   6124  CG  PRO    14      86.045   9.474 -11.883  1.00 59.18      L21B C
ATOM   6125  C   PRO    14      85.163   7.759  -8.676  1.00 64.90      L21B C
ATOM   6126  O   PRO    14      86.192   7.676  -8.010  1.00 65.34      L21B O
ATOM   6127  N   GLY    15      84.098   7.001  -8.434  1.00 67.76      L21B N
ATOM   6128  CA  GLY    15      84.110   6.056  -7.336  1.00 71.41      L21B C
ATOM   6129  C   GLY    15      84.108   6.707  -5.963  1.00 75.03      L21B C
ATOM   6130  O   GLY    15      84.199   6.020  -4.950  1.00 74.91      L21B O
ATOM   6131  N   GLN    16      84.006   8.029  -5.908  1.00 79.31      L21B N
ATOM   6132  CA  GLN    16      83.878   8.712  -4.623  1.00 83.11      L21B C
ATOM   6133  CB  GLN    16      84.415  10.143  -4.714  1.00 85.50      L21B C
ATOM   6134  CG  GLN    16      85.929  10.243  -4.740  1.00 90.35      L21B C
ATOM   6135  CD  GLN    16      86.419  11.683  -4.710  1.00 92.66      L21B C
ATOM   6136  OE1 GLN    16      87.482  12.005  -5.256  1.00 92.77      L21B O
ATOM   6137  NE2 GLN    16      85.644  12.560  -4.069  1.00 93.76      L21B N
ATOM   6138  C   GLN    16      82.428   8.746  -4.145  1.00 83.84      L21B C
ATOM   6139  O   GLN    16      81.498   8.490  -4.919  1.00 84.75      L21B O
ATOM   6140  N   SER    17      82.246   9.056  -2.864  1.00 83.83      L21B N
ATOM   6141  CA  SER    17      80.913   9.239  -2.294  1.00 84.75      L21B C
ATOM   6142  CB  SER    17      80.603   8.125  -1.279  1.00 86.49      L21B C
ATOM   6143  OG  SER    17      80.314   6.891  -1.922  1.00 89.21      L21B O
ATOM   6144  C   SER    17      80.758  10.607  -1.620  1.00 83.88      L21B C
ATOM   6145  O   SER    17      81.204  10.812  -0.490  1.00 82.32      L21B O
ATOM   6146  N   ILE    18      80.116  11.539  -2.318  1.00 83.58      L21B N
ATOM   6147  CA  ILE    18      79.808  12.850  -1.751  1.00 83.01      L21B C
ATOM   6148  CB  ILE    18      79.972  13.974  -2.794  1.00 82.86      L21B C
ATOM   6149  CG2 ILE    18      81.394  14.495  -2.776  1.00 80.11      L21B C
ATOM   6150  CG1 ILE    18      79.581  13.462  -4.182  1.00 85.84      L21B C
ATOM   6151  CD1 ILE    18      78.174  12.921  -4.275  1.00 90.99      L21B C
ATOM   6152  C   ILE    18      78.394  12.925  -1.211  1.00 81.22      L21B C
ATOM   6153  O   ILE    18      77.562  12.068  -1.492  1.00 83.09      L21B O
ATOM   6154  N   THR    19      78.117  13.960  -0.433  1.00 77.37      L21B N
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ATOM   6155  CA  THR  19      76.739  14.264  -0.115  1.00 73.65      L21B C
ATOM   6156  CB  THR  19      76.344  13.699   1.250  1.00 72.21      L21B C
ATOM   6157  OG1 THR  19      76.707  14.624   2.277  1.00 70.39      L21B O
ATOM   6158  CG2 THR  19      77.049  12.387   1.488  1.00 70.27      L21B C
ATOM   6159  C   THR  19      76.458  15.765  -0.134  1.00 71.42      L21B C
ATOM   6160  O   THR  19      77.370  16.590  -0.039  1.00 71.11      L21B O
ATOM   6161  N   ILE  20      75.178  16.100  -0.261  1.00 69.05      L21B N
ATOM   6162  CA  ILE  20      74.737  17.473  -0.418  1.00 65.68      L21B C
ATOM   6163  CB  ILE  20      74.059  17.658  -1.789  1.00 61.69      L21B C
ATOM   6164  CG2 ILE  20      73.641  19.087  -1.966  1.00 61.81      L21B C
ATOM   6165  CG1 ILE  20      75.028  17.270  -2.906  1.00 58.15      L21B C
ATOM   6166  CD1 ILE  20      74.481  17.454  -4.286  1.00 54.31      L21B C
ATOM   6167  C   ILE  20      73.773  17.862   0.700  1.00 65.38      L21B C
ATOM   6168  O   ILE  20      72.859  17.120   1.041  1.00 65.12      L21B O
ATOM   6169  N   SER  21      73.988  19.036   1.270  1.00 66.68      L21B N
ATOM   6170  CA  SER  21      73.178  19.513   2.381  1.00 67.79      L21B C
ATOM   6171  CB  SER  21      74.038  20.377   3.303  1.00 68.52      L21B C
ATOM   6172  OG  SER  21      73.230  21.136   4.187  1.00 70.90      L21B O
ATOM   6173  C   SER  21      71.953  20.314   1.930  1.00 67.36      L21B C
ATOM   6174  O   SER  21      71.994  21.035   0.932  1.00 66.91      L21B O
ATOM   6175  N   CYS  22      70.868  20.194   2.689  1.00 67.57      L21B N
ATOM   6176  CA  CYS  22      69.663  20.984   2.452  1.00 68.05      L21B C
ATOM   6177  C   CYS  22      69.109  21.427   3.798  1.00 69.14      L21B C
ATOM   6178  O   CYS  22      68.334  20.711   4.402  1.00 69.10      L21B O
ATOM   6179  CB  CYS  22      68.629  20.118   1.732  1.00 67.60      L21B C
ATOM   6180  SG  CYS  22      67.077  20.933   1.216  1.00 65.97      L21B S
ATOM   6181  N   THR  23      69.495  22.593   4.290  1.00 72.15      L21B N
ATOM   6182  CA  THR  23      69.051  22.958   5.628  1.00 76.33      L21B C
ATOM   6183  CB  THR  23      70.205  23.520   6.473  1.00 75.55      L21B C
ATOM   6184  OG1 THR  23      70.577  24.806   5.972  1.00 78.73      L21B O
ATOM   6185  CG2 THR  23      71.409  22.595   6.407  1.00 75.50      L21B C
ATOM   6186  C   THR  23      67.903  23.967   5.615  1.00 78.37      L21B C
ATOM   6187  O   THR  23      68.068  25.123   5.217  1.00 79.56      L21B O
ATOM   6188  N   GLY  24      66.737  23.509   6.059  1.00 79.38      L21B N
ATOM   6189  CA  GLY  24      65.554  24.344   6.057  1.00 80.39      L21B C
ATOM   6190  C   GLY  24      65.173  24.696   7.472  1.00 81.41      L21B C
ATOM   6191  O   GLY  24      66.042  24.918   8.306  1.00 81.58      L21B O
ATOM   6192  N   THR  25      63.878  24.747   7.757  1.00 83.11      L21B N
ATOM   6193  CA  THR  25      63.429  25.146   9.085  1.00 85.45      L21B C
ATOM   6194  CB  THR  25      62.866  26.591   9.071  1.00 86.14      L21B C
ATOM   6195  OG1 THR  25      61.621  26.629   8.360  1.00 87.19      L21B O
ATOM   6196  CG2 THR  25      63.846  27.528   8.388  1.00 86.73      L21B C
ATOM   6197  C   THR  25      62.372  24.216   9.692  1.00 86.38      L21B C
ATOM   6198  O   THR  25      62.153  23.098   9.217  1.00 85.39      L21B O
ATOM   6199  N   SER  26      61.735  24.693  10.757  1.00 87.61      L21B N
ATOM   6200  CA  SER  26      60.632  23.990  11.394  1.00 89.14      L21B C
ATOM   6201  CB  SER  26      60.383  24.581  12.781  1.00 87.79      L21B C
ATOM   6202  OG  SER  26      60.268  25.992  12.708  1.00 85.49      L21B O
ATOM   6203  C   SER  26      59.375  24.120  10.538  1.00 91.27      L21B C
ATOM   6204  O   SER  26      58.300  23.680  10.923  1.00 92.38      L21B O
ATOM   6205  N   SER  27      59.520  24.737   9.374  1.00 93.31      L21B N
ATOM   6206  CA  SER  27      58.409  24.899   8.452  1.00 94.36      L21B C
ATOM   6207  CB  SER  27      58.176  26.382   8.174  1.00 94.15      L21B C
ATOM   6208  OG  SER  27      58.262  27.140   9.369  1.00 91.23      L21B O
ATOM   6209  C   SER  27      58.730  24.186   7.148  1.00 95.59      L21B C
ATOM   6210  O   SER  27      57.837  23.851   6.376  1.00 97.39      L21B O
ATOM   6211  N   ASP  28      60.019  23.964   6.913  1.00 96.07      L21B N
ATOM   6212  CA  ASP  28      60.507  23.454   5.637  1.00 96.19      L21B C
ATOM   6213  CB  ASP  28      61.825  24.146   5.270  1.00 98.10      L21B C
ATOM   6214  CG  ASP  28      61.718  25.670   5.281  1.00 99.61      L21B C
ATOM   6215  OD1 ASP  28      62.749  26.351   5.067  1.00 97.89      L21B O
ATOM   6216  OD2 ASP  28      60.603  26.188   5.502  1.00103.08      L21B O
ATOM   6217  C   ASP  28      60.724  21.945   5.704  1.00 96.20      L21B C
ATOM   6218  O   ASP  28      59.811  21.163   5.451  1.00 94.14      L21B O
ATOM   6219  N   VAL  29      61.938  21.535   6.046  1.00 97.12      L21B N
ATOM   6220  CA  VAL  29      62.221  20.122   6.218  1.00 99.22      L21B C
ATOM   6221  CB  VAL  29      63.636  19.773   5.739  1.00 98.78      L21B C
ATOM   6222  CG1 VAL  29      63.907  20.450   4.416  1.00 98.60      L21B C
ATOM   6223  CG2 VAL  29      64.651  20.188   6.771  1.00 98.58      L21B C
ATOM   6224  C   VAL  29      62.108  19.788   7.695  1.00100.89      L21B C
ATOM   6225  O   VAL  29      62.414  18.677   8.110  1.00102.16      L21B O
ATOM   6226  N   GLY  30      61.671  20.767   8.481  1.00102.57      L21B N
ATOM   6227  CA  GLY  30      61.450  20.546   9.899  1.00105.19      L21B C
ATOM   6228  C   GLY  30      60.199  19.727  10.159  1.00106.33      L21B C
ATOM   6229  O   GLY  30      60.273  18.632  10.716  1.00106.20      L21B O
ATOM   6230  N   GLY  31      59.047  20.260   9.764  1.00106.57      L21B N
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ATOM   6231  CA  GLY    31      57.841  19.452   9.704  1.00108.37      L21B C
ATOM   6232  C   GLY    31      57.715  18.872   8.308  1.00110.31      L21B C
ATOM   6233  O   GLY    31      58.503  19.220   7.432  1.00110.17      L21B O
ATOM   6234  N   TYR    32      56.739  17.997   8.088  1.00113.44      L21B N
ATOM   6235  CA  TYR    32      56.571  17.350   6.789  1.00116.17      L21B C
ATOM   6236  CB  TYR    32      56.262  18.386   5.701  1.00116.41      L21B C
ATOM   6237  CG  TYR    32      55.157  19.341   6.065  1.00116.91      L21B C
ATOM   6238  CD1 TYR    32      55.442  20.632   6.478  1.00116.46      L21B C
ATOM   6239  CE1 TYR    32      54.436  21.495   6.863  1.00116.02      L21B C
ATOM   6240  CD2 TYR    32      53.832  18.938   6.040  1.00117.30      L21B C
ATOM   6241  CE2 TYR    32      52.819  19.792   6.423  1.00116.92      L21B C
ATOM   6242  CZ  TYR    32      53.127  21.068   6.836  1.00116.30      L21B C
ATOM   6243  OH  TYR    32      52.120  21.910   7.244  1.00115.72      L21B O
ATOM   6244  C   TYR    32      57.824  16.580   6.393  1.00116.81      L21B C
ATOM   6245  O   TYR    32      58.878  17.165   6.156  1.00119.69      L21B O
ATOM   6246  N   ASN    33      57.707  15.262   6.314  1.00115.62      L21B N
ATOM   6247  CA  ASN    33      58.799  14.445   5.812  1.00113.19      L21B C
ATOM   6248  CB  ASN    33      58.848  13.114   6.566  1.00117.95      L21B C
ATOM   6249  CG  ASN    33      59.306  13.282   8.009  1.00119.92      L21B C
ATOM   6250  OD1 ASN    33      60.493  13.158   8.310  1.00121.58      L21B O
ATOM   6251  ND2 ASN    33      58.367  13.572   8.904  1.00121.03      L21B N
ATOM   6252  C   ASN    33      58.608  14.220   4.323  1.00109.46      L21B C
ATOM   6253  O   ASN    33      58.512  13.088   3.852  1.00106.99      L21B O
ATOM   6254  N   SER    34      58.548  15.325   3.591  1.00106.79      L21B N
ATOM   6255  CA  SER    34      58.362  15.283   2.152  1.00104.32      L21B C
ATOM   6256  CB  SER    34      56.946  15.740   1.803  1.00106.50      L21B C
ATOM   6257  OG  SER    34      55.978  14.885   2.390  1.00111.24      L21B O
ATOM   6258  C   SER    34      59.392  16.158   1.439  1.00100.10      L21B C
ATOM   6259  O   SER    34      59.077  17.247   0.958  1.00 99.91      L21B O
ATOM   6260  N   VAL    35      60.626  15.664   1.385  1.00 94.55      L21B N
ATOM   6261  CA  VAL    35      61.709  16.306   0.646  1.00 89.79      L21B C
ATOM   6262  CB  VAL    35      62.984  16.444   1.524  1.00 92.16      L21B C
ATOM   6263  CG1 VAL    35      64.129  16.991   0.699  1.00 93.68      L21B C
ATOM   6264  CG2 VAL    35      62.715  17.366   2.701  1.00 92.64      L21B C
ATOM   6265  C   VAL    35      62.066  15.512  -0.616  1.00 84.92      L21B C
ATOM   6266  O   VAL    35      62.069  14.280  -0.616  1.00 83.72      L21B O
ATOM   6267  N   SER    36      62.367  16.227  -1.694  1.00 79.11      L21B N
ATOM   6268  CA  SER    36      62.736  15.591  -2.953  1.00 72.73      L21B C
ATOM   6269  CB  SER    36      61.610  15.776  -3.973  1.00 73.26      L21B C
ATOM   6270  OG  SER    36      60.416  15.151  -3.537  1.00 71.59      L21B O
ATOM   6271  C   SER    36      64.048  16.150  -3.514  1.00 67.49      L21B C
ATOM   6272  O   SER    36      64.421  17.287  -3.221  1.00 67.42      L21B O
ATOM   6273  N   TRP    37      64.747  15.345  -4.311  1.00 59.72      L21B N
ATOM   6274  CA  TRP    37      65.956  15.799  -4.991  1.00 53.82      L21B C
ATOM   6275  CB  TRP    37      67.188  14.986  -4.533  1.00 52.55      L21B C
ATOM   6276  CG  TRP    37      67.512  15.188  -3.075  1.00 51.75      L21B C
ATOM   6277  CD2 TRP    37      68.289  16.250  -2.492  1.00 51.86      L21B C
ATOM   6278  CE2 TRP    37      68.218  16.097  -1.089  1.00 51.73      L21B C
ATOM   6279  CE3 TRP    37      69.031  17.314  -3.017  1.00 51.67      L21B C
ATOM   6280  CD1 TRP    37      67.032  14.457  -2.033  1.00 50.94      L21B C
ATOM   6281  NE1 TRP    37      67.446  14.996  -0.838  1.00 50.27      L21B N
ATOM   6282  CZ2 TRP    37      68.860  16.969  -0.201  1.00 52.65      L21B C
ATOM   6283  CZ3 TRP    37      69.671  18.180  -2.131  1.00 52.41      L21B C
ATOM   6284  CH2 TRP    37      69.578  18.000  -0.739  1.00 52.64      L21B C
ATOM   6285  C   TRP    37      65.789  15.691  -6.500  1.00 50.21      L21B C
ATOM   6286  O   TRP    37      65.254  14.707  -7.016  1.00 48.35      L21B O
ATOM   6287  N   TYR    38      66.232  16.715  -7.216  1.00 46.26      L21B N
ATOM   6288  CA  TYR    38      66.171  16.653  -8.663  1.00 44.46      L21B C
ATOM   6289  CB  TYR    38      65.166  17.680  -9.204  1.00 43.15      L21B C
ATOM   6290  CG  TYR    38      63.817  17.598  -8.542  1.00 43.72      L21B C
ATOM   6291  CD1 TYR    38      63.592  18.195  -7.300  1.00 43.01      L21B C
ATOM   6292  CE1 TYR    38      62.358  18.109  -6.671  1.00 43.19      L21B C
ATOM   6293  CD2 TYR    38      62.769  16.913  -9.139  1.00 43.98      L21B C
ATOM   6294  CE2 TYR    38      61.528  16.826  -8.514  1.00 45.21      L21B C
ATOM   6295  CZ  TYR    38      61.335  17.427  -7.284  1.00 44.43      L21B C
ATOM   6296  OH  TYR    38      60.110  17.343  -6.672  1.00 46.77      L21B O
ATOM   6297  C   TYR    38      67.538  16.887  -9.283  1.00 43.39      L21B C
ATOM   6298  O   TYR    38      68.369  17.634  -8.765  1.00 41.69      L21B O
ATOM   6299  N   GLN    39      67.756  16.250 -10.415  1.00 42.45      L21B N
ATOM   6300  CA  GLN    39      69.051  16.271 -11.045  1.00 44.62      L21B C
ATOM   6301  CB  GLN    39      69.563  14.830 -11.147  1.00 43.52      L21B C
ATOM   6302  CG  GLN    39      70.923  14.695 -11.736  1.00 43.60      L21B C
ATOM   6303  CD  GLN    39      71.010  13.530 -12.675  1.00 43.02      L21B C
ATOM   6304  OE1 GLN    39      70.373  13.515 -13.729  1.00 44.47      L21B O
ATOM   6305  NE2 GLN    39      71.803  12.541 -12.305  1.00 44.49      L21B N
ATOM   6306  C   GLN    39      68.918  16.917 -12.420  1.00 45.66      L21B C
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ATOM   6307  O   GLN    39      68.207  16.427 -13.288  1.00 46.08      L21B O
ATOM   6308  N   GLN    40      69.595  18.032 -12.624  1.00 47.83      L21B N
ATOM   6309  CA  GLN    40      69.399  18.751 -13.863  1.00 51.69      L21B C
ATOM   6310  CB  GLN    40      68.899  20.160 -13.548  1.00 47.93      L21B C
ATOM   6311  CG  GLN    40      68.128  20.864 -14.645  1.00 40.63      L21B C
ATOM   6312  CD  GLN    40      67.849  22.305 -14.288  1.00 40.95      L21B C
ATOM   6313  OE1 GLN    40      68.289  22.797 -13.245  1.00 38.49      L21B O
ATOM   6314  NE2 GLN    40      67.110  22.997 -15.147  1.00 40.56      L21B N
ATOM   6315  C   GLN    40      70.700  18.786 -14.648  1.00 56.56      L21B C
ATOM   6316  O   GLN    40      71.663  19.444 -14.257  1.00 56.79      L21B O
ATOM   6317  N   HIS    41      70.723  18.049 -15.751  1.00 63.38      L21B N
ATOM   6318  CA  HIS    41      71.838  18.105 -16.682  1.00 70.76      L21B C
ATOM   6319  CB  HIS    41      71.747  16.988 -17.723  1.00 76.62      L21B C
ATOM   6320  CG  HIS    41      72.508  15.752 -17.354  1.00 84.15      L21B C
ATOM   6321  CD2 HIS    41      73.110  14.817 -18.126  1.00 87.55      L21B C
ATOM   6322  ND1 HIS    41      72.715  15.363 -16.047  1.00 85.99      L21B N
ATOM   6323  CE1 HIS    41      73.412  14.241 -16.031  1.00 89.12      L21B C
ATOM   6324  NE2 HIS    41      73.664  13.888 -17.279  1.00 90.00      L21B N
ATOM   6325  C   HIS    41      71.762  19.431 -17.386  1.00 72.18      L21B C
ATOM   6326  O   HIS    41      70.686  19.880 -17.756  1.00 72.48      L21B O
ATOM   6327  N   PRO    42      72.910  20.070 -17.602  1.00 74.10      L21B N
ATOM   6328  CD  PRO    42      74.271  19.528 -17.437  1.00 75.72      L21B C
ATOM   6329  CA  PRO    42      72.911  21.425 -18.160  1.00 74.30      L21B C
ATOM   6330  CB  PRO    42      74.385  21.677 -18.467  1.00 75.42      L21B C
ATOM   6331  CG  PRO    42      75.127  20.753 -17.534  1.00 76.94      L21B C
ATOM   6332  C   PRO    42      72.039  21.510 -19.413  1.00 73.03      L21B C
ATOM   6333  O   PRO    42      72.244  20.767 -20.374  1.00 73.33      L21B O
ATOM   6334  N   GLY    43      71.056  22.406 -19.391  1.00 70.77      L21B N
ATOM   6335  CA  GLY    43      70.264  22.663 -20.580  1.00 69.10      L21B C
ATOM   6336  C   GLY    43      69.196  21.615 -20.847  1.00 68.64      L21B C
ATOM   6337  O   GLY    43      68.511  21.650 -21.877  1.00 68.71      L21B O
ATOM   6338  N   LYS    44      69.050  20.672 -19.924  1.00 66.15      L21B N
ATOM   6339  CA  LYS    44      67.954  19.718 -19.990  1.00 62.25      L21B C
ATOM   6340  CB  LYS    44      68.496  18.293 -19.887  1.00 63.41      L21B C
ATOM   6341  CG  LYS    44      68.098  17.408 -21.052  1.00 63.60      L21B C
ATOM   6342  CD  LYS    44      69.236  17.236 -22.039  1.00 64.54      L21B C
ATOM   6343  CE  LYS    44      70.137  16.088 -21.614  1.00 66.95      L21B C
ATOM   6344  NZ  LYS    44      69.357  14.844 -21.329  1.00 67.67      L21B N
ATOM   6345  C   LYS    44      66.993  20.014 -18.841  1.00 59.21      L21B C
ATOM   6346  O   LYS    44      67.323  20.792 -17.943  1.00 60.37      L21B O
ATOM   6347  N   ALA    45      65.807  19.410 -18.873  1.00 53.31      L21B N
ATOM   6348  CA  ALA    45      64.799  19.666 -17.849  1.00 47.57      L21B C
ATOM   6349  CB  ALA    45      63.420  19.452 -18.421  1.00 46.62      L21B C
ATOM   6350  C   ALA    45      65.016  18.757 -16.653  1.00 44.16      L21B C
ATOM   6351  O   ALA    45      65.471  17.630 -16.813  1.00 45.35      L21B O
ATOM   6352  N   PRO    46      64.699  19.234 -15.436  1.00 40.96      L21B N
ATOM   6353  CD  PRO    46      64.061  20.525 -15.160  1.00 39.13      L21B C
ATOM   6354  CA  PRO    46      64.986  18.509 -14.194  1.00 39.73      L21B C
ATOM   6355  CB  PRO    46      64.389  19.394 -13.109  1.00 37.66      L21B C
ATOM   6356  CG  PRO    46      64.330  20.716 -13.706  1.00 37.73      L21B C
ATOM   6357  C   PRO    46      64.345  17.137 -14.197  1.00 39.44      L21B C
ATOM   6358  O   PRO    46      63.377  16.903 -14.928  1.00 39.36      L21B O
ATOM   6359  N   LYS    47      64.882  16.245 -13.364  1.00 38.72      L21B N
ATOM   6360  CA  LYS    47      64.447  14.848 -13.300  1.00 38.21      L21B C
ATOM   6361  CB  LYS    47      65.377  13.983 -14.145  1.00 38.85      L21B C
ATOM   6362  CG  LYS    47      64.962  12.549 -14.275  1.00 40.70      L21B C
ATOM   6363  CD  LYS    47      66.095  11.628 -13.885  1.00 41.88      L21B C
ATOM   6364  CE  LYS    47      65.859  10.233 -14.427  1.00 41.50      L21B C
ATOM   6365  NZ  LYS    47      66.936   9.330 -13.966  1.00 43.50      L21B N
ATOM   6366  C   LYS    47      64.482  14.372 -11.854  1.00 38.19      L21B C
ATOM   6367  O   LYS    47      65.471  14.592 -11.163  1.00 39.09      L21B O
ATOM   6368  N   LEU    48      63.415  13.708 -11.402  1.00 38.85      L21B N
ATOM   6369  CA  LEU    48      63.282  13.342  -9.998  1.00 38.42      L21B C
ATOM   6370  CB  LEU    48      61.821  13.069  -9.662  1.00 36.60      L21B C
ATOM   6371  CG  LEU    48      61.539  12.550  -8.241  1.00 34.74      L21B C
ATOM   6372  CD1 LEU    48      61.520  13.712  -7.240  1.00 32.22      L21B C
ATOM   6373  CD2 LEU    48      60.213  11.808  -8.233  1.00 30.83      L21B C
ATOM   6374  C   LEU    48      64.121  12.124  -9.609  1.00 42.07      L21B C
ATOM   6375  O   LEU    48      64.150  11.112 -10.323  1.00 39.62      L21B O
ATOM   6376  N   MET    49      64.778  12.242  -8.448  1.00 46.56      L21B N
ATOM   6377  CA  MET    49      65.732  11.263  -7.926  1.00 49.08      L21B C
ATOM   6378  CB  MET    49      67.106  11.906  -7.794  1.00 47.33      L21B C
ATOM   6379  CG  MET    49      68.147  11.319  -8.707  1.00 46.66      L21B C
ATOM   6380  SD  MET    49      67.781  11.564 -10.453  1.00 49.31      L21B S
ATOM   6381  CE  MET    49      69.100  10.529 -11.241  1.00 43.99      L21B C
ATOM   6382  C   MET    49      65.324  10.710  -6.567  1.00 52.99      L21B C
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ATOM	6383	O	MET	49	65.582	9.552	-6.269	1.00	56.08	L21B O
ATOM	6384	N	ILE	50	64.698	11.542	-5.740	1.00	57.38	L21B N
ATOM	6385	CA	ILE	50	64.297	11.149	-4.386	1.00	62.77	L21B C
ATOM	6386	CB	ILE	50	65.429	11.454	-3.365	1.00	61.84	L21B C
ATOM	6387	CG2	ILE	50	64.975	11.128	-1.946	1.00	59.34	L21B C
ATOM	6388	CG1	ILE	50	66.674	10.633	-3.701	1.00	62.37	L21B C
ATOM	6389	CD1	ILE	50	66.568	9.172	-3.330	1.00	62.87	L21B C
ATOM	6390	C	ILE	50	63.024	11.882	-3.937	1.00	67.31	L21B C
ATOM	6391	O	ILE	50	62.874	13.075	-4.172	1.00	67.56	L21B O
ATOM	6392	N	TYR	51	62.108	11.163	-3.297	1.00	72.88	L21B N
ATOM	6393	CA	TYR	51	60.957	11.792	-2.655	1.00	77.81	L21B C
ATOM	6394	CB	TYR	51	59.684	11.567	-3.470	1.00	80.69	L21B C
ATOM	6395	CG	TYR	51	59.343	10.120	-3.728	1.00	85.48	L21B C
ATOM	6396	CD1	TYR	51	58.614	9.378	-2.805	1.00	86.81	L21B C
ATOM	6397	CE1	TYR	51	58.273	8.064	-3.059	1.00	91.20	L21B C
ATOM	6398	CD2	TYR	51	59.723	9.504	-4.913	1.00	87.17	L21B C
ATOM	6399	CE2	TYR	51	59.388	8.196	-5.175	1.00	91.86	L21B C
ATOM	6400	CZ	TYR	51	58.664	7.481	-4.249	1.00	93.04	L21B C
ATOM	6401	OH	TYR	51	58.334	6.177	-4.525	1.00	98.22	L21B O
ATOM	6402	C	TYR	51	60.751	11.251	-1.254	1.00	78.65	L21B C
ATOM	6403	O	TYR	51	61.310	10.221	-0.891	1.00	80.21	L21B O
ATOM	6404	N	GLU	52	59.942	11.949	-0.470	1.00	79.50	L21B N
ATOM	6405	CA	GLU	52	59.763	11.598	0.928	1.00	80.88	L21B C
ATOM	6406	CB	GLU	52	58.756	10.452	1.052	1.00	84.81	L21B C
ATOM	6407	CG	GLU	52	57.474	10.696	0.252	1.00	91.28	L21B C
ATOM	6408	CD	GLU	52	56.273	9.900	0.749	1.00	94.35	L21B C
ATOM	6409	OE1	GLU	52	55.551	9.333	-0.097	1.00	96.91	L21B O
ATOM	6410	OE2	GLU	52	56.043	9.846	1.978	1.00	97.80	L21B O
ATOM	6411	C	GLU	52	61.119	11.191	1.496	1.00	79.08	L21B C
ATOM	6412	O	GLU	52	61.477	10.020	1.495	1.00	78.80	L21B O
ATOM	6413	N	VAL	53	61.856	12.192	1.967	1.00	77.54	L21B N
ATOM	6414	CA	VAL	53	63.236	12.083	2.446	1.00	75.58	L21B C
ATOM	6415	CB	VAL	53	63.293	11.922	3.981	1.00	76.57	L21B C
ATOM	6416	CG1	VAL	53	62.286	12.866	4.630	1.00	76.93	L21B C
ATOM	6417	CG2	VAL	53	63.040	10.470	4.380	1.00	78.24	L21B C
ATOM	6418	C	VAL	53	64.137	11.017	1.839	1.00	72.99	L21B C
ATOM	6419	O	VAL	53	65.296	11.298	1.555	1.00	72.93	L21B O
ATOM	6420	N	SER	54	63.623	9.807	1.638	1.00	70.73	L21B N
ATOM	6421	CA	SER	54	64.491	8.664	1.383	1.00	69.14	L21B C
ATOM	6422	CB	SER	54	64.597	7.798	2.641	1.00	67.96	L21B C
ATOM	6423	OG	SER	54	63.409	7.057	2.862	1.00	66.01	L21B O
ATOM	6424	C	SER	54	64.110	7.774	0.205	1.00	68.64	L21B C
ATOM	6425	O	SER	54	64.851	6.858	-0.132	1.00	68.13	L21B O
ATOM	6426	N	ASN	55	62.975	8.030	-0.430	1.00	68.81	L21B N
ATOM	6427	CA	ASN	55	62.484	7.095	-1.435	1.00	70.32	L21B C
ATOM	6428	CB	ASN	55	60.962	7.070	-1.418	1.00	68.63	L21B C
ATOM	6429	CG	ASN	55	60.417	6.256	-0.273	1.00	66.99	L21B C
ATOM	6430	OD1	ASN	55	60.253	6.756	0.840	1.00	65.31	L21B O
ATOM	6431	ND2	ASN	55	60.143	4.981	-0.536	1.00	67.92	L21B N
ATOM	6432	C	ASN	55	62.974	7.353	-2.850	1.00	72.09	L21B C
ATOM	6433	O	ASN	55	63.184	8.494	-3.242	1.00	72.67	L21B O
ATOM	6434	N	ARG	56	63.143	6.279	-3.614	1.00	74.41	L21B N
ATOM	6435	CA	ARG	56	63.667	6.376	-4.969	1.00	78.24	L21B C
ATOM	6436	CB	ARG	56	64.995	5.619	-5.070	1.00	78.52	L21B C
ATOM	6437	CG	ARG	56	65.465	5.352	-6.488	1.00	79.19	L21B C
ATOM	6438	CD	ARG	56	66.854	4.744	-6.501	1.00	81.29	L21B C
ATOM	6439	NE	ARG	56	66.905	3.448	-5.831	1.00	85.09	L21B N
ATOM	6440	CZ	ARG	56	67.379	3.257	-4.602	1.00	87.03	L21B C
ATOM	6441	NH1	ARG	56	67.382	2.036	-4.078	1.00	89.77	L21B N
ATOM	6442	NH2	ARG	56	67.846	4.281	-3.897	1.00	87.54	L21B N
ATOM	6443	C	ARG	56	62.700	5.845	-6.025	1.00	78.99	L21B C
ATOM	6444	O	ARG	56	62.260	4.700	-5.958	1.00	81.35	L21B O
ATOM	6445	N	PRO	57	62.361	6.679	-7.022	1.00	78.11	L21B N
ATOM	6446	CD	PRO	57	62.335	8.145	-6.931	1.00	74.41	L21B C
ATOM	6447	CA	PRO	57	61.659	6.211	-8.222	1.00	80.05	L21B C
ATOM	6448	CB	PRO	57	61.704	7.410	-9.177	1.00	75.32	L21B C
ATOM	6449	CG	PRO	57	62.227	8.580	-8.372	1.00	73.32	L21B C
ATOM	6450	C	PRO	57	62.341	4.997	-8.834	1.00	82.95	L21B C
ATOM	6451	O	PRO	57	63.301	4.476	-8.279	1.00	85.80	L21B O
ATOM	6452	N	SER	58	61.840	4.549	-9.980	1.00	84.28	L21B N
ATOM	6453	CA	SER	58	62.325	3.322	-10.595	1.00	85.65	L21B C
ATOM	6454	CB	SER	58	61.282	2.768	-11.564	1.00	86.16	L21B C
ATOM	6455	OG	SER	58	60.341	1.955	-10.881	1.00	86.06	L21B O
ATOM	6456	C	SER	58	63.660	3.471	-11.323	1.00	86.71	L21B C
ATOM	6457	O	SER	58	64.612	2.751	-11.028	1.00	87.93	L21B O
ATOM	6458	N	GLY	59	63.733	4.397	-12.272	1.00	87.65	L21B N

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ATOM   6459  CA  GLY    59      64.947   4.547 -13.056  1.00 87.89      L21B C
ATOM   6460  C   GLY    59      66.181   4.868 -12.229  1.00 88.35      L21B C
ATOM   6461  O   GLY    59      67.286   4.431 -12.552  1.00 88.22      L21B O
ATOM   6462  N   VAL    60      66.002   5.628 -11.156  1.00 89.24      L21B N
ATOM   6463  CA  VAL    60      67.131   6.077 -10.355  1.00 90.52      L21B C
ATOM   6464  CB  VAL    60      66.649   6.943  -9.176  1.00 90.94      L21B C
ATOM   6465  CG1 VAL    60      67.830   7.355  -8.309  1.00 90.92      L21B C
ATOM   6466  CG2 VAL    60      65.926   8.165  -9.698  1.00 89.49      L21B C
ATOM   6467  C   VAL    60      67.965   4.917  -9.820  1.00 90.98      L21B C
ATOM   6468  O   VAL    60      67.431   3.962  -9.263  1.00 90.77      L21B O
ATOM   6469  N   SER    61      69.279   5.020 -10.000  1.00 92.18      L21B N
ATOM   6470  CA  SER    61      70.220   3.994  -9.562  1.00 93.58      L21B C
ATOM   6471  CB  SER    61      71.616   4.292 -10.126  1.00 93.45      L21B C
ATOM   6472  OG  SER    61      72.558   3.294  -9.762  1.00 93.35      L21B O
ATOM   6473  C   SER    61      70.284   3.911  -8.038  1.00 94.34      L21B C
ATOM   6474  O   SER    61      69.902   4.844  -7.332  1.00 93.56      L21B O
ATOM   6475  N   ASN    62      70.762   2.779  -7.535  1.00 95.84      L21B N
ATOM   6476  CA  ASN    62      70.855   2.564  -6.098  1.00 96.77      L21B C
ATOM   6477  CB  ASN    62      71.117   1.074  -5.795  1.00 97.06      L21B C
ATOM   6478  CG  ASN    62      71.867   0.350  -6.920  1.00 97.69      L21B C
ATOM   6479  OD1 ASN    62      72.751  -0.470  -6.662  1.00 94.14      L21B O
ATOM   6480  ND2 ASN    62      71.504   0.638  -8.167  1.00 99.77      L21B N
ATOM   6481  C   ASN    62      71.936   3.445  -5.465  1.00 96.37      L21B C
ATOM   6482  O   ASN    62      72.013   3.566  -4.238  1.00 97.21      L21B O
ATOM   6483  N   ARG    63      72.756   4.067  -6.313  1.00 94.95      L21B N
ATOM   6484  CA  ARG    63      73.833   4.953  -5.862  1.00 92.26      L21B C
ATOM   6485  CB  ARG    63      74.654   5.450  -7.056  1.00 96.28      L21B C
ATOM   6486  CG  ARG    63      75.721   4.486  -7.538  1.00102.27      L21B C
ATOM   6487  CD  ARG    63      76.425   5.012  -8.780  1.00109.64      L21B C
ATOM   6488  NE  ARG    63      75.705   4.668 -10.006  1.00117.20      L21B N
ATOM   6489  CZ  ARG    63      76.177   4.858 -11.237  1.00120.97      L21B C
ATOM   6490  NH1 ARG    63      77.379   5.397 -11.416  1.00123.18      L21B N
ATOM   6491  NH2 ARG    63      75.449   4.501 -12.290  1.00122.26      L21B N
ATOM   6492  C   ARG    63      73.279   6.154  -5.107  1.00 88.51      L21B C
ATOM   6493  O   ARG    63      73.897   6.643  -4.162  1.00 87.03      L21B O
ATOM   6494  N   PHE    64      72.112   6.627  -5.533  1.00 84.21      L21B N
ATOM   6495  CA  PHE    64      71.492   7.792  -4.926  1.00 79.46      L21B C
ATOM   6496  CB  PHE    64      70.617   8.514  -5.947  1.00 77.20      L21B C
ATOM   6497  CG  PHE    64      71.371   9.032  -7.139  1.00 73.89      L21B C
ATOM   6498  CD1 PHE    64      72.315  10.034  -6.997  1.00 71.50      L21B C
ATOM   6499  CD2 PHE    64      71.116   8.533  -8.409  1.00 73.34      L21B C
ATOM   6500  CE1 PHE    64      72.995  10.531  -8.099  1.00 69.83      L21B C
ATOM   6501  CE2 PHE    64      71.791   9.026  -9.520  1.00 71.53      L21B C
ATOM   6502  CZ  PHE    64      72.731  10.028  -9.363  1.00 70.20      L21B C
ATOM   6503  C   PHE    64      70.643   7.384  -3.734  1.00 77.58      L21B C
ATOM   6504  O   PHE    64      69.857   6.447  -3.817  1.00 77.96      L21B O
ATOM   6505  N   SER    65      70.805   8.101  -2.629  1.00 75.04      L21B N
ATOM   6506  CA  SER    65      70.039   7.851  -1.413  1.00 74.86      L21B C
ATOM   6507  CB  SER    65      70.851   6.980  -0.459  1.00 74.40      L21B C
ATOM   6508  OG  SER    65      72.221   7.354  -0.478  1.00 74.90      L21B O
ATOM   6509  C   SER    65      69.646   9.142  -0.702  1.00 75.62      L21B C
ATOM   6510  O   SER    65      70.332  10.157  -0.808  1.00 75.41      L21B O
ATOM   6511  N   GLY    66      68.541   9.106   0.030  1.00 76.47      L21B N
ATOM   6512  CA  GLY    66      68.127  10.295   0.745  1.00 77.49      L21B C
ATOM   6513  C   GLY    66      68.129  10.100   2.243  1.00 79.01      L21B C
ATOM   6514  O   GLY    66      68.074   8.975   2.718  1.00 79.00      L21B O
ATOM   6515  N   SER    67      68.187  11.197   2.985  1.00 81.38      L21B N
ATOM   6516  CA  SER    67      68.061  11.146   4.432  1.00 84.01      L21B C
ATOM   6517  CB  SER    67      69.374  10.708   5.067  1.00 83.67      L21B C
ATOM   6518  OG  SER    67      69.386  11.030   6.454  1.00 79.98      L21B O
ATOM   6519  C   SER    67      67.682  12.510   4.981  1.00 86.52      L21B C
ATOM   6520  O   SER    67      67.820  13.520   4.296  1.00 88.88      L21B O
ATOM   6521  N   LYS    68      67.202  12.539   6.219  1.00 87.89      L21B N
ATOM   6522  CA  LYS    68      66.874  13.798   6.879  1.00 89.48      L21B C
ATOM   6523  CB  LYS    68      65.350  13.985   6.906  1.00 90.65      L21B C
ATOM   6524  CG  LYS    68      64.889  15.386   7.302  1.00 91.64      L21B C
ATOM   6525  CD  LYS    68      63.737  15.347   8.302  1.00 93.17      L21B C
ATOM   6526  CE  LYS    68      62.378  15.370   7.615  1.00 94.61      L21B C
ATOM   6527  NZ  LYS    68      62.140  16.629   6.858  1.00 96.05      L21B N
ATOM   6528  C   LYS    68      67.435  13.789   8.309  1.00 90.68      L21B C
ATOM   6529  O   LYS    68      68.008  12.794   8.748  1.00 90.52      L21B O
ATOM   6530  N   SER    69      67.283  14.905   9.017  1.00 92.64      L21B N
ATOM   6531  CA  SER    69      67.631  15.009  10.434  1.00 94.30      L21B C
ATOM   6532  CB  SER    69      69.064  14.526  10.685  1.00 94.54      L21B C
ATOM   6533  OG  SER    69      69.420  14.675  12.050  1.00 94.63      L21B O
ATOM   6534  C   SER    69      67.504  16.465  10.853  1.00 94.68      L21B C
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ATOM   6535  O   SER    69      67.867  17.365  10.099  1.00 95.48      L21B O
ATOM   6536  N   GLY    70      66.988  16.699  12.053  1.00 93.84      L21B N
ATOM   6537  CA  GLY    70      66.749  18.063  12.471  1.00 93.22      L21B C
ATOM   6538  C   GLY    70      66.095  18.822  11.338  1.00 93.55      L21B C
ATOM   6539  O   GLY    70      65.264  18.271  10.616  1.00 92.49      L21B O
ATOM   6540  N   ASN    71      66.476  20.082  11.166  1.00 94.45      L21B N
ATOM   6541  CA  ASN    71      65.925  20.890  10.089  1.00 94.23      L21B C
ATOM   6542  CB  ASN    71      65.702  22.323  10.571  1.00 95.39      L21B C
ATOM   6543  CG  ASN    71      64.724  22.400  11.730  1.00 98.12      L21B C
ATOM   6544  OD1 ASN    71      64.501  21.414  12.438  1.00 98.62      L21B O
ATOM   6545  ND2 ASN    71      64.131  23.574  11.930  1.00 98.55      L21B N
ATOM   6546  C   ASN    71      66.828  20.887   8.863  1.00 92.16      L21B C
ATOM   6547  O   ASN    71      66.873  21.862   8.119  1.00 94.10      L21B O
ATOM   6548  N   THR    72      67.541  19.786   8.648  1.00 87.06      L21B N
ATOM   6549  CA  THR    72      68.445  19.690   7.510  1.00 82.06      L21B C
ATOM   6550  CB  THR    72      69.884  20.104   7.900  1.00 82.77      L21B C
ATOM   6551  OG1 THR    72      70.792  19.717   6.860  1.00 80.39      L21B O
ATOM   6552  CG2 THR    72      70.291  19.458   9.213  1.00 83.47      L21B C
ATOM   6553  C   THR    72      68.495  18.307   6.865  1.00 78.60      L21B C
ATOM   6554  O   THR    72      69.052  17.363   7.418  1.00 77.66      L21B O
ATOM   6555  N   ALA    73      67.919  18.203   5.673  1.00 75.24      L21B N
ATOM   6556  CA  ALA    73      67.911  16.960   4.915  1.00 72.01      L21B C
ATOM   6557  CB  ALA    73      66.668  16.895   4.045  1.00 72.86      L21B C
ATOM   6558  C   ALA    73      69.151  16.890   4.048  1.00 69.53      L21B C
ATOM   6559  O   ALA    73      69.801  17.904   3.812  1.00 70.14      L21B O
ATOM   6560  N   SER    74      69.482  15.699   3.566  1.00 65.99      L21B N
ATOM   6561  CA  SER    74      70.686  15.548   2.761  1.00 62.02      L21B C
ATOM   6562  CB  SER    74      71.920  15.435   3.670  1.00 62.25      L21B C
ATOM   6563  OG  SER    74      71.556  15.188   5.022  1.00 60.36      L21B O
ATOM   6564  C   SER    74      70.648  14.371   1.802  1.00 59.13      L21B C
ATOM   6565  O   SER    74      70.224  13.276   2.153  1.00 57.73      L21B O
ATOM   6566  N   LEU    75      71.100  14.614   0.580  1.00 56.92      L21B N
ATOM   6567  CA  LEU    75      71.247  13.556  -0.405  1.00 56.96      L21B C
ATOM   6568  CB  LEU    75      70.961  14.109  -1.813  1.00 53.44      L21B C
ATOM   6569  CG  LEU    75      71.478  13.368  -3.055  1.00 49.90      L21B C
ATOM   6570  CD1 LEU    75      70.723  12.083  -3.242  1.00 47.92      L21B C
ATOM   6571  CD2 LEU    75      71.333  14.248  -4.283  1.00 47.50      L21B C
ATOM   6572  C   LEU    75      72.683  13.072  -0.319  1.00 59.01      L21B C
ATOM   6573  O   LEU    75      73.597  13.882  -0.273  1.00 58.67      L21B O
ATOM   6574  N   THR    76      72.887  11.760  -0.286  1.00 61.56      L21B N
ATOM   6575  CA  THR    76      74.217  11.203  -0.522  1.00 63.56      L21B C
ATOM   6576  CB  THR    76      74.689  10.351   0.679  1.00 63.91      L21B C
ATOM   6577  OG1 THR    76      75.672   9.404   0.239  1.00 62.00      L21B O
ATOM   6578  CG2 THR    76      73.520   9.630   1.317  1.00 65.76      L21B C
ATOM   6579  C   THR    76      74.301  10.363  -1.806  1.00 63.85      L21B C
ATOM   6580  O   THR    76      73.356   9.682  -2.181  1.00 64.85      L21B O
ATOM   6581  N   ILE    77      75.441  10.433  -2.481  1.00 64.17      L21B N
ATOM   6582  CA  ILE    77      75.659   9.668  -3.700  1.00 65.28      L21B C
ATOM   6583  CB  ILE    77      75.768  10.588  -4.929  1.00 66.15      L21B C
ATOM   6584  CG2 ILE    77      75.926   9.741  -6.193  1.00 65.87      L21B C
ATOM   6585  CG1 ILE    77      74.542  11.505  -5.005  1.00 66.23      L21B C
ATOM   6586  CD1 ILE    77      74.658  12.647  -6.022  1.00 63.85      L21B C
ATOM   6587  C   ILE    77      76.966   8.885  -3.595  1.00 66.96      L21B C
ATOM   6588  O   ILE    77      78.022   9.465  -3.335  1.00 66.30      L21B O
ATOM   6589  N   SER    78      76.900   7.574  -3.804  1.00 68.95      L21B N
ATOM   6590  CA  SER    78      78.101   6.746  -3.865  1.00 71.17      L21B C
ATOM   6591  CB  SER    78      77.860   5.437  -3.129  1.00 72.64      L21B C
ATOM   6592  OG  SER    78      76.778   4.739  -3.723  1.00 77.40      L21B O
ATOM   6593  C   SER    78      78.479   6.442  -5.313  1.00 71.61      L21B C
ATOM   6594  O   SER    78      77.635   6.483  -6.209  1.00 72.46      L21B O
ATOM   6595  N   GLY    79      79.750   6.143  -5.544  1.00 71.26      L21B N
ATOM   6596  CA  GLY    79      80.152   5.652  -6.849  1.00 72.39      L21B C
ATOM   6597  C   GLY    79      80.059   6.655  -7.983  1.00 73.11      L21B C
ATOM   6598  O   GLY    79      79.582   6.323  -9.076  1.00 73.09      L21B O
ATOM   6599  N   LEU    80      80.529   7.872  -7.729  1.00 73.02      L21B N
ATOM   6600  CA  LEU    80      80.457   8.954  -8.701  1.00 75.02      L21B C
ATOM   6601  CB  LEU    80      81.414  10.068  -8.289  1.00 73.44      L21B C
ATOM   6602  CG  LEU    80      80.769  11.379  -7.849  1.00 73.15      L21B C
ATOM   6603  CD1 LEU    80      81.385  11.863  -6.549  1.00 72.79      L21B C
ATOM   6604  CD2 LEU    80      80.951  12.403  -8.949  1.00 73.15      L21B C
ATOM   6605  C   LEU    80      80.799   8.496 -10.109  1.00 76.64      L21B C
ATOM   6606  O   LEU    80      81.746   7.744 -10.294  1.00 77.62      L21B O
ATOM   6607  N   GLN    81      80.033   8.949 -11.101  1.00 78.31      L21B N
ATOM   6608  CA  GLN    81      80.361   8.673 -12.499  1.00 80.13      L21B C
ATOM   6609  CB  GLN    81      79.558   7.482 -13.027  1.00 81.09      L21B C
ATOM   6610  CG  GLN    81      80.408   6.231 -13.313  1.00 86.00      L21B C
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ATOM   6611  CD  GLN    81      81.532   6.458 -14.348  1.00 87.47      L21B C
ATOM   6612  OE1 GLN    81      81.628   5.730 -15.344  1.00 88.68      L21B O
ATOM   6613  NE2 GLN    81      82.384   7.458 -14.105  1.00 87.99      L21B N
ATOM   6614  C   GLN    81      80.158   9.862 -13.425  1.00 80.81      L21B C
ATOM   6615  O   GLN    81      79.674  10.910 -13.011  1.00 80.44      L21B O
ATOM   6616  N   ALA    82      80.532   9.681 -14.688  1.00 83.61      L21B N
ATOM   6617  CA  ALA    82      80.618  10.779 -15.648  1.00 85.92      L21B C
ATOM   6618  CB  ALA    82      81.479  10.362 -16.830  1.00 87.14      L21B C
ATOM   6619  C   ALA    82      79.252  11.250 -16.143  1.00 87.29      L21B C
ATOM   6620  O   ALA    82      79.142  12.285 -16.800  1.00 87.53      L21B O
ATOM   6621  N   GLU    83      78.215  10.480 -15.836  1.00 88.20      L21B N
ATOM   6622  CA  GLU    83      76.853  10.872 -16.168  1.00 88.75      L21B C
ATOM   6623  CB  GLU    83      76.027   9.645 -16.581  1.00 93.51      L21B C
ATOM   6624  CG  GLU    83      76.485   8.968 -17.876  1.00101.49      L21B C
ATOM   6625  CD  GLU    83      76.352   9.864 -19.106  1.00105.65      L21B C
ATOM   6626  OE1 GLU    83      75.306  10.538 -19.249  1.00108.12      L21B O
ATOM   6627  OE2 GLU    83      77.297   9.889 -19.929  1.00108.37      L21B O
ATOM   6628  C   GLU    83      76.203  11.546 -14.967  1.00 87.10      L21B C
ATOM   6629  O   GLU    83      75.026  11.891 -15.004  1.00 85.86      L21B O
ATOM   6630  N   ASP    84      76.970  11.725 -13.899  1.00 85.49      L21B N
ATOM   6631  CA  ASP    84      76.427  12.298 -12.677  1.00 85.32      L21B C
ATOM   6632  CB  ASP    84      76.985  11.571 -11.457  1.00 85.04      L21B C
ATOM   6633  CG  ASP    84      76.359  10.212 -11.263  1.00 85.56      L21B C
ATOM   6634  OD1 ASP    84      75.368   9.921 -11.971  1.00 84.97      L21B O
ATOM   6635  OD2 ASP    84      76.854   9.441 -10.409  1.00 84.74      L21B O
ATOM   6636  C   ASP    84      76.709  13.782 -12.553  1.00 84.15      L21B C
ATOM   6637  O   ASP    84      76.047  14.488 -11.789  1.00 86.30      L21B O
ATOM   6638  N   GLU    85      77.696  14.258 -13.299  1.00 81.29      L21B N
ATOM   6639  CA  GLU    85      78.000  15.675 -13.284  1.00 77.09      L21B C
ATOM   6640  CB  GLU    85      79.103  15.990 -14.298  1.00 80.08      L21B C
ATOM   6641  CG  GLU    85      79.936  17.229 -13.971  1.00 82.41      L21B C
ATOM   6642  CD  GLU    85      81.225  17.298 -14.784  1.00 85.05      L21B C
ATOM   6643  OE1 GLU    85      81.886  18.365 -14.775  1.00 87.67      L21B O
ATOM   6644  OE2 GLU    85      81.579  16.281 -15.433  1.00 86.35      L21B O
ATOM   6645  C   GLU    85      76.707  16.378 -13.663  1.00 72.73      L21B C
ATOM   6646  O   GLU    85      76.233  16.248 -14.795  1.00 72.00      L21B O
ATOM   6647  N   ALA    86      76.126  17.093 -12.700  1.00 67.45      L21B N
ATOM   6648  CA  ALA    86      74.894  17.839 -12.930  1.00 62.87      L21B C
ATOM   6649  CB  ALA    86      73.738  16.877 -13.092  1.00 61.14      L21B C
ATOM   6650  C   ALA    86      74.588  18.828 -11.803  1.00 60.31      L21B C
ATOM   6651  O   ALA    86      75.329  18.920 -10.823  1.00 59.84      L21B O
ATOM   6652  N   ASP    87      73.488  19.569 -11.953  1.00 56.64      L21B N
ATOM   6653  CA  ASP    87      72.981  20.439 -10.892  1.00 51.63      L21B C
ATOM   6654  CB  ASP    87      72.359  21.694 -11.495  1.00 51.56      L21B C
ATOM   6655  CG  ASP    87      73.392  22.714 -11.931  1.00 49.78      L21B C
ATOM   6656  OD1 ASP    87      74.611  22.481 -11.745  1.00 46.62      L21B O
ATOM   6657  OD2 ASP    87      72.965  23.759 -12.464  1.00 49.17      L21B O
ATOM   6658  C   ASP    87      71.925  19.711 -10.067  1.00 48.54      L21B C
ATOM   6659  O   ASP    87      71.115  18.961 -10.616  1.00 47.22      L21B O
ATOM   6660  N   TYR    88      71.928  19.942  -8.756  1.00 44.85      L21B N
ATOM   6661  CA  TYR    88      70.998  19.255  -7.863  1.00 43.21      L21B C
ATOM   6662  CB  TYR    88      71.738  18.231  -7.004  1.00 41.53      L21B C
ATOM   6663  CG  TYR    88      72.244  17.037  -7.777  1.00 41.60      L21B C
ATOM   6664  CD1 TYR    88      73.344  17.148  -8.624  1.00 42.48      L21B C
ATOM   6665  CE1 TYR    88      73.805  16.065  -9.349  1.00 41.25      L21B C
ATOM   6666  CD2 TYR    88      71.618  15.804  -7.674  1.00 39.77      L21B C
ATOM   6667  CE2 TYR    88      72.075  14.718  -8.396  1.00 41.08      L21B C
ATOM   6668  CZ  TYR    88      73.169  14.859  -9.228  1.00 40.42      L21B C
ATOM   6669  OH  TYR    88      73.645  13.785  -9.924  1.00 41.65      L21B O
ATOM   6670  C   TYR    88      70.236  20.199  -6.945  1.00 42.70      L21B C
ATOM   6671  O   TYR    88      70.823  21.011  -6.237  1.00 43.49      L21B O
ATOM   6672  N   TYR    89      68.916  20.082  -6.943  1.00 43.07      L21B N
ATOM   6673  CA  TYR    89      68.089  20.937  -6.095  1.00 41.89      L21B C
ATOM   6674  CB  TYR    89      67.103  21.754  -6.955  1.00 37.85      L21B C
ATOM   6675  CG  TYR    89      67.755  22.596  -8.038  1.00 31.95      L21B C
ATOM   6676  CD1 TYR    89      68.093  22.031  -9.269  1.00 29.53      L21B C
ATOM   6677  CE1 TYR    89      68.727  22.782 -10.259  1.00 28.25      L21B C
ATOM   6678  CD2 TYR    89      68.058  23.946  -7.820  1.00 30.26      L21B C
ATOM   6679  CE2 TYR    89      68.694  24.719  -8.808  1.00 27.69      L21B C
ATOM   6680  CZ  TYR    89      69.031  24.128 -10.026  1.00 27.67      L21B C
ATOM   6681  OH  TYR    89      69.699  24.847 -11.002  1.00 21.69      L21B O
ATOM   6682  C   TYR    89      67.315  20.074  -5.112  1.00 42.66      L21B C
ATOM   6683  O   TYR    89      66.771  19.034  -5.481  1.00 44.45      L21B O
ATOM   6684  N   CYS    90      67.265  20.495  -3.861  1.00 44.04      L21B N
ATOM   6685  CA  CYS    90      66.297  19.909  -2.964  1.00 49.10      L21B C
ATOM   6686  C   CYS    90      65.021  20.751  -2.907  1.00 50.09      L21B C
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ATOM   6687  O   CYS    90      65.039  21.980  -3.019  1.00 47.52      L21B O
ATOM   6688  CB  CYS    90      66.890  19.753  -1.568  1.00 53.04      L21B C
ATOM   6689  SG  CYS    90      67.391  21.301  -0.757  1.00 61.42      L21B S
ATOM   6690  N   ASN    91      63.905  20.068  -2.734  1.00 51.79      L21B N
ATOM   6691  CA  ASN    91      62.625  20.733  -2.620  1.00 53.65      L21B C
ATOM   6692  CB  ASN    91      61.774  20.348  -3.834  1.00 55.81      L21B C
ATOM   6693  CG  ASN    91      60.330  20.139  -3.495  1.00 59.21      L21B C
ATOM   6694  OD1 ASN    91      59.971  19.164  -2.820  1.00 62.36      L21B O
ATOM   6695  ND2 ASN    91      59.476  21.045  -3.967  1.00 60.75      L21B N
ATOM   6696  C   ASN    91      61.984  20.292  -1.307  1.00 52.94      L21B C
ATOM   6697  O   ASN    91      62.323  19.237  -0.777  1.00 52.18      L21B O
ATOM   6698  N   SER    92      61.085  21.108  -0.765  1.00 52.71      L21B N
ATOM   6699  CA  SER    92      60.248  20.669   0.347  1.00 51.08      L21B C
ATOM   6700  CB  SER    92      60.893  20.993   1.680  1.00 50.00      L21B C
ATOM   6701  OG  SER    92      59.963  20.766   2.715  1.00 46.75      L21B O
ATOM   6702  C   SER    92      58.869  21.284   0.347  1.00 51.25      L21B C
ATOM   6703  O   SER    92      58.706  22.470   0.053  1.00 50.09      L21B O
ATOM   6704  N   TYR    93      57.876  20.470   0.699  1.00 52.79      L21B N
ATOM   6705  CA  TYR    93      56.552  20.995   1.003  1.00 54.65      L21B C
ATOM   6706  CB  TYR    93      55.628  19.920   1.579  1.00 50.92      L21B C
ATOM   6707  CG  TYR    93      55.188  18.849   0.616  1.00 48.58      L21B C
ATOM   6708  CD1 TYR    93      55.740  18.762  -0.647  1.00 47.35      L21B C
ATOM   6709  CE1 TYR    93      55.373  17.746  -1.513  1.00 48.50      L21B C
ATOM   6710  CD2 TYR    93      54.243  17.891   0.995  1.00 46.57      L21B C
ATOM   6711  CE2 TYR    93      53.871  16.869   0.143  1.00 46.50      L21B C
ATOM   6712  CZ  TYR    93      54.443  16.798  -1.115  1.00 48.92      L21B C
ATOM   6713  OH  TYR    93      54.110  15.776  -1.982  1.00 50.22      L21B O
ATOM   6714  C   TYR    93      56.733  22.048   2.068  1.00 57.60      L21B C
ATOM   6715  O   TYR    93      57.557  21.896   2.959  1.00 57.59      L21B O
ATOM   6716  N   THR    94      55.951  23.111   1.991  1.00 62.04      L21B N
ATOM   6717  CA  THR    94      55.672  23.890   3.183  1.00 64.72      L21B C
ATOM   6718  CB  THR    94      56.079  25.350   2.997  1.00 62.42      L21B C
ATOM   6719  OG1 THR    94      55.926  26.035   4.243  1.00 64.29      L21B O
ATOM   6720  CG2 THR    94      55.212  26.019   1.955  1.00 59.60      L21B C
ATOM   6721  C   THR    94      54.178  23.803   3.512  1.00 65.94      L21B C
ATOM   6722  O   THR    94      53.428  23.081   2.854  1.00 69.06      L21B O
ATOM   6723  N   SER    95      53.754  24.524   4.538  1.00 65.95      L21B N
ATOM   6724  CA  SER    95      52.365  24.502   4.967  1.00 64.79      L21B C
ATOM   6725  CB  SER    95      52.192  25.481   6.120  1.00 66.94      L21B C
ATOM   6726  OG  SER    95      53.426  25.622   6.818  1.00 69.87      L21B O
ATOM   6727  C   SER    95      51.402  24.855   3.830  1.00 63.59      L21B C
ATOM   6728  O   SER    95      50.291  24.333   3.763  1.00 61.36      L21B O
ATOM   6729  N   THR    96      51.847  25.729   2.932  1.00 63.25      L21B N
ATOM   6730  CA  THR    96      51.009  26.245   1.860  1.00 63.14      L21B C
ATOM   6731  CB  THR    96      50.750  27.731   2.070  1.00 61.83      L21B C
ATOM   6732  OG1 THR    96      51.992  28.381   2.345  1.00 62.39      L21B O
ATOM   6733  CG2 THR    96      49.805  27.950   3.225  1.00 61.90      L21B C
ATOM   6734  C   THR    96      51.567  26.046   0.442  1.00 64.18      L21B C
ATOM   6735  O   THR    96      50.810  26.045  -0.525  1.00 65.09      L21B O
ATOM   6736  N   SER    97      52.878  25.879   0.301  1.00 64.48      L21B N
ATOM   6737  CA  SER    97      53.459  25.738  -1.034  1.00 64.51      L21B C
ATOM   6738  CB  SER    97      53.716  27.118  -1.627  1.00 63.56      L21B C
ATOM   6739  OG  SER    97      54.028  28.042  -0.603  1.00 61.46      L21B O
ATOM   6740  C   SER    97      54.739  24.910  -1.078  1.00 64.82      L21B C
ATOM   6741  O   SER    97      54.927  23.999  -0.270  1.00 66.42      L21B O
ATOM   6742  N   MET    98      55.605  25.217  -2.041  1.00 64.07      L21B N
ATOM   6743  CA  MET    98      56.908  24.557  -2.149  1.00 62.18      L21B C
ATOM   6744  CB  MET    98      57.126  24.032  -3.574  1.00 63.88      L21B C
ATOM   6745  CG  MET    98      55.993  23.171  -4.104  1.00 67.65      L21B C
ATOM   6746  SD  MET    98      55.659  21.710  -3.078  1.00 72.81      L21B S
ATOM   6747  CE  MET    98      56.438  20.416  -4.065  1.00 73.59      L21B C
ATOM   6748  C   MET    98      58.031  25.530  -1.802  1.00 59.11      L21B C
ATOM   6749  O   MET    98      57.833  26.736  -1.831  1.00 60.23      L21B O
ATOM   6750  N   VAL    99      59.201  25.001  -1.459  1.00 55.44      L21B N
ATOM   6751  CA  VAL    99      60.453  25.748  -1.572  1.00 51.98      L21B C
ATOM   6752  CB  VAL    99      60.916  26.368  -0.239  1.00 52.88      L21B C
ATOM   6753  CG1 VAL    99      60.298  27.734  -0.041  1.00 54.75      L21B C
ATOM   6754  CG2 VAL    99      60.547  25.444   0.903  1.00 55.69      L21B C
ATOM   6755  C   VAL    99      61.569  24.839  -2.041  1.00 49.13      L21B C
ATOM   6756  O   VAL    99      61.746  23.728  -1.539  1.00 47.82      L21B O
ATOM   6757  N   PHE   100      62.325  25.325  -3.013  1.00 46.97      L21B N
ATOM   6758  CA  PHE   100      63.500  24.628  -3.481  1.00 44.40      L21B C
ATOM   6759  CB  PHE   100      63.664  24.834  -4.981  1.00 42.82      L21B C
ATOM   6760  CG  PHE   100      62.723  24.021  -5.813  1.00 41.24      L21B C
ATOM   6761  CD1 PHE   100      61.481  24.518  -6.164  1.00 40.72      L21B C
ATOM   6762  CD2 PHE   100      63.107  22.781  -6.298  1.00 40.13      L21B C
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ATOM   6763  CE1 PHE   100      60.632  23.802  -6.996  1.00 38.77      L21B C
ATOM   6764  CE2 PHE   100      62.269  22.054  -7.129  1.00 39.31      L21B C
ATOM   6765  CZ  PHE   100      61.027  22.569  -7.482  1.00 40.01      L21B C
ATOM   6766  C   PHE   100      64.705  25.183  -2.749  1.00 43.67      L21B C
ATOM   6767  O   PHE   100      64.636  26.240  -2.138  1.00 42.08      L21B O
ATOM   6768  N   GLY   101      65.808  24.452  -2.794  1.00 44.87      L21B N
ATOM   6769  CA  GLY   101      67.050  24.990  -2.278  1.00 44.48      L21B C
ATOM   6770  C   GLY   101      67.713  25.786  -3.385  1.00 44.11      L21B C
ATOM   6771  O   GLY   101      67.280  25.735  -4.550  1.00 42.11      L21B O
ATOM   6772  N   GLY   102      68.764  26.517  -3.021  1.00 43.78      L21B N
ATOM   6773  CA  GLY   102      69.452  27.362  -3.973  1.00 42.09      L21B C
ATOM   6774  C   GLY   102      70.110  26.548  -5.064  1.00 41.93      L21B C
ATOM   6775  O   GLY   102      70.423  27.067  -6.133  1.00 39.38      L21B O
ATOM   6776  N   GLY   103      70.305  25.261  -4.792  1.00 43.18      L21B N
ATOM   6777  CA  GLY   103      70.929  24.376  -5.760  1.00 44.49      L21B C
ATOM   6778  C   GLY   103      72.381  24.131  -5.405  1.00 46.09      L21B C
ATOM   6779  O   GLY   103      73.019  24.962  -4.735  1.00 45.13      L21B O
ATOM   6780  N   THR   104      72.898  22.985  -5.839  1.00 47.33      L21B N
ATOM   6781  CA  THR   104      74.308  22.669  -5.691  1.00 49.35      L21B C
ATOM   6782  CB  THR   104      74.541  21.577  -4.622  1.00 46.64      L21B C
ATOM   6783  OG1 THR   104      74.064  22.036  -3.353  1.00 43.30      L21B O
ATOM   6784  CG2 THR   104      76.018  21.274  -4.491  1.00 43.32      L21B C
ATOM   6785  C   THR   104      74.850  22.180  -7.026  1.00 52.94      L21B C
ATOM   6786  O   THR   104      74.168  21.456  -7.752  1.00 53.31      L21B O
ATOM   6787  N   LYS   105      76.074  22.591  -7.342  1.00 55.91      L21B N
ATOM   6788  CA  LYS   105      76.745  22.179  -8.566  1.00 59.05      L21B C
ATOM   6789  CB  LYS   105      77.629  23.326  -9.068  1.00 61.76      L21B C
ATOM   6790  CG  LYS   105      77.714  23.459 -10.584  1.00 65.69      L21B C
ATOM   6791  CD  LYS   105      78.692  22.469 -11.214  1.00 68.17      L21B C
ATOM   6792  CE  LYS   105      79.046  22.903 -12.635  1.00 70.95      L21B C
ATOM   6793  NZ  LYS   105      80.160  22.133 -13.244  1.00 73.15      L21B N
ATOM   6794  C   LYS   105      77.602  20.953  -8.252  1.00 59.65      L21B C
ATOM   6795  O   LYS   105      78.315  20.946  -7.252  1.00 60.37      L21B O
ATOM   6796  N   LEU   106      77.534  19.922  -9.095  1.00 60.39      L21B N
ATOM   6797  CA  LEU   106      78.335  18.710  -8.898  1.00 61.91      L21B C
ATOM   6798  CB  LEU   106      77.446  17.462  -8.881  1.00 62.09      L21B C
ATOM   6799  CG  LEU   106      78.153  16.100  -8.764  1.00 60.56      L21B C
ATOM   6800  CD1 LEU   106      78.509  15.828  -7.314  1.00 60.55      L21B C
ATOM   6801  CD2 LEU   106      77.252  15.000  -9.277  1.00 60.14      L21B C
ATOM   6802  C   LEU   106      79.392  18.521  -9.977  1.00 64.04      L21B C
ATOM   6803  O   LEU   106      79.095  18.572 -11.170  1.00 63.86      L21B O
ATOM   6804  N   THR   107      80.628  18.276  -9.559  1.00 65.89      L21B N
ATOM   6805  CA  THR   107      81.684  18.024 -10.521  1.00 67.61      L21B C
ATOM   6806  CB  THR   107      82.803  19.050 -10.378  1.00 67.75      L21B C
ATOM   6807  OG1 THR   107      82.220  20.345 -10.228  1.00 68.92      L21B O
ATOM   6808  CG2 THR   107      83.692  19.050 -11.613  1.00 67.06      L21B C
ATOM   6809  C   THR   107      82.272  16.644 -10.316  1.00 68.99      L21B C
ATOM   6810  O   THR   107      82.644  16.280  -9.200  1.00 68.71      L21B O
ATOM   6811  N   VAL   108      82.349  15.879 -11.400  1.00 70.46      L21B N
ATOM   6812  CA  VAL   108      83.153  14.661 -11.425  1.00 72.21      L21B C
ATOM   6813  CB  VAL   108      82.594  13.619 -12.423  1.00 73.56      L21B C
ATOM   6814  CG1 VAL   108      83.486  12.397 -12.449  1.00 74.74      L21B C
ATOM   6815  CG2 VAL   108      81.188  13.226 -12.040  1.00 74.55      L21B C
ATOM   6816  C   VAL   108      84.553  15.047 -11.880  1.00 72.19      L21B C
ATOM   6817  O   VAL   108      84.814  15.159 -13.083  1.00 71.74      L21B O
ATOM   6818  N   LEU   109      85.443  15.247 -10.909  1.00 72.49      L21B N
ATOM   6819  CA  LEU   109      86.805  15.715 -11.160  1.00 72.84      L21B C
ATOM   6820  CB  LEU   109      87.622  15.621  -9.871  1.00 70.84      L21B C
ATOM   6821  CG  LEU   109      87.127  16.543  -8.755  1.00 70.37      L21B C
ATOM   6822  CD1 LEU   109      87.677  16.075  -7.441  1.00 69.58      L21B C
ATOM   6823  CD2 LEU   109      87.544  17.991  -9.031  1.00 69.90      L21B C
ATOM   6824  C   LEU   109      87.518  14.962 -12.280  1.00 73.49      L21B C
ATOM   6825  O   LEU   109      87.811  13.778 -12.154  1.00 74.15      L21B O
ATOM   6826  N   GLY   110      87.792  15.666 -13.374  1.00 73.86      L21B N
ATOM   6827  CA  GLY   110      88.496  15.074 -14.497  1.00 74.58      L21B C
ATOM   6828  C   GLY   110      89.870  15.695 -14.688  1.00 74.91      L21B C
ATOM   6829  O   GLY   110      90.465  15.602 -15.762  1.00 73.20      L21B O
ATOM   6830  N   GLN   111      90.362  16.335 -13.631  1.00 77.03      L21B N
ATOM   6831  CA  GLN   111      91.662  17.003 -13.625  1.00 80.05      L21B C
ATOM   6832  CB  GLN   111      91.706  18.108 -14.680  1.00 81.49      L21B C
ATOM   6833  CG  GLN   111      90.660  19.177 -14.485  1.00 82.71      L21B C
ATOM   6834  CD  GLN   111      91.022  20.463 -15.171  1.00 81.90      L21B C
ATOM   6835  OE1 GLN   111      91.918  21.183 -14.726  1.00 81.02      L21B O
ATOM   6836  NE2 GLN   111      90.332  20.764 -16.264  1.00 80.18      L21B N
ATOM   6837  C   GLN   111      91.887  17.599 -12.238  1.00 80.10      L21B C
ATOM   6838  O   GLN   111      91.014  17.524 -11.377  1.00 81.14      L21B O
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ATOM   6839  N   PRO  112      93.073  18.171 -11.990  1.00 78.66      L21B N
ATOM   6840  CD  PRO  112      94.285  18.245 -12.819  1.00 74.89      L21B C
ATOM   6841  CA  PRO  112      93.327  18.636 -10.625  1.00 76.87      L21B C
ATOM   6842  CB  PRO  112      94.845  18.786 -10.569  1.00 74.73      L21B C
ATOM   6843  CG  PRO  112      95.361  18.095 -11.803  1.00 73.97      L21B C
ATOM   6844  C   PRO  112      92.615  19.952 -10.358  1.00 75.57      L21B C
ATOM   6845  O   PRO  112      92.349  20.717 -11.285  1.00 76.36      L21B O
ATOM   6846  N   LYS  113      92.312  20.210  -9.091  1.00 72.84      L21B N
ATOM   6847  CA  LYS  113      91.651  21.448  -8.695  1.00 70.02      L21B C
ATOM   6848  CB  LYS  113      91.273  21.394  -7.210  1.00 71.19      L21B C
ATOM   6849  CG  LYS  113      90.170  20.412  -6.863  1.00 71.89      L21B C
ATOM   6850  CD  LYS  113      89.612  20.699  -5.473  1.00 72.26      L21B C
ATOM   6851  CE  LYS  113      88.519  19.711  -5.076  1.00 73.00      L21B C
ATOM   6852  NZ  LYS  113      88.060  19.907  -3.667  1.00 71.49      L21B N
ATOM   6853  C   LYS  113      92.570  22.649  -8.943  1.00 68.17      L21B C
ATOM   6854  O   LYS  113      93.767  22.585  -8.675  1.00 68.73      L21B O
ATOM   6855  N   ALA  114      92.018  23.747  -9.449  1.00 65.81      L21B N
ATOM   6856  CA  ALA  114      92.836  24.897  -9.802  1.00 62.76      L21B C
ATOM   6857  CB  ALA  114      92.869  25.050 -11.313  1.00 63.57      L21B C
ATOM   6858  C   ALA  114      92.280  26.158  -9.159  1.00 60.79      L21B C
ATOM   6859  O   ALA  114      91.119  26.489  -9.362  1.00 59.21      L21B O
ATOM   6860  N   ALA  115      93.098  26.861  -8.381  1.00 57.86      L21B N
ATOM   6861  CA  ALA  115      92.658  28.117  -7.771  1.00 55.74      L21B C
ATOM   6862  CB  ALA  115      93.698  28.630  -6.786  1.00 54.06      L21B C
ATOM   6863  C   ALA  115      92.432  29.140  -8.879  1.00 54.53      L21B C
ATOM   6864  O   ALA  115      93.166  29.165  -9.861  1.00 56.60      L21B O
ATOM   6865  N   PRO  116      91.409  29.997  -8.739  1.00 52.44      L21B N
ATOM   6866  CD  PRO  116      90.642  30.294  -7.513  1.00 53.94      L21B C
ATOM   6867  CA  PRO  116      91.089  30.936  -9.816  1.00 50.36      L21B C
ATOM   6868  CB  PRO  116      89.689  31.412  -9.447  1.00 52.55      L21B C
ATOM   6869  CG  PRO  116      89.720  31.425  -7.930  1.00 53.47      L21B C
ATOM   6870  C   PRO  116      92.103  32.093  -9.851  1.00 48.65      L21B C
ATOM   6871  O   PRO  116      92.627  32.498  -8.803  1.00 47.48      L21B O
ATOM   6872  N   SER  117      92.375  32.627 -11.043  1.00 45.92      L21B N
ATOM   6873  CA  SER  117      93.083  33.906 -11.154  1.00 43.14      L21B C
ATOM   6874  CB  SER  117      93.978  33.918 -12.384  1.00 42.23      L21B C
ATOM   6875  OG  SER  117      94.987  32.945 -12.258  1.00 47.57      L21B O
ATOM   6876  C   SER  117      92.109  35.073 -11.241  1.00 41.00      L21B C
ATOM   6877  O   SER  117      91.326  35.177 -12.181  1.00 40.97      L21B O
ATOM   6878  N   VAL  118      92.163  35.955 -10.259  1.00 37.34      L21B N
ATOM   6879  CA  VAL  118      91.337  37.143 -10.274  1.00 36.92      L21B C
ATOM   6880  CB  VAL  118      90.715  37.387  -8.878  1.00 36.85      L21B C
ATOM   6881  CG1 VAL  118      89.895  38.663  -8.867  1.00 34.92      L21B C
ATOM   6882  CG2 VAL  118      89.862  36.213  -8.495  1.00 38.22      L21B C
ATOM   6883  C   VAL  118      92.215  38.332 -10.635  1.00 37.10      L21B C
ATOM   6884  O   VAL  118      93.224  38.580  -9.971  1.00 37.46      L21B O
ATOM   6885  N   THR  119      91.846  39.075 -11.673  1.00 36.80      L21B N
ATOM   6886  CA  THR  119      92.433  40.405 -11.836  1.00 38.29      L21B C
ATOM   6887  CB  THR  119      93.380  40.467 -13.072  1.00 40.02      L21B C
ATOM   6888  OG1 THR  119      92.629  40.766 -14.249  1.00 42.31      L21B O
ATOM   6889  CG2 THR  119      94.098  39.115 -13.267  1.00 41.99      L21B C
ATOM   6890  C   THR  119      91.335  41.463 -11.949  1.00 36.59      L21B C
ATOM   6891  O   THR  119      90.328  41.254 -12.631  1.00 35.96      L21B O
ATOM   6892  N   LEU  120      91.511  42.588 -11.262  1.00 34.86      L21B N
ATOM   6893  CA  LEU  120      90.407  43.542 -11.101  1.00 35.65      L21B C
ATOM   6894  CB  LEU  120      89.973  43.569  -9.627  1.00 32.38      L21B C
ATOM   6895  CG  LEU  120      89.176  44.819  -9.256  1.00 32.01      L21B C
ATOM   6896  CD1 LEU  120      87.826  44.808  -9.988  1.00 29.34      L21B C
ATOM   6897  CD2 LEU  120      89.019  44.892  -7.740  1.00 30.16      L21B C
ATOM   6898  C   LEU  120      90.716  44.978 -11.595  1.00 34.81      L21B C
ATOM   6899  O   LEU  120      91.618  45.628 -11.081  1.00 35.69      L21B O
ATOM   6900  N   PHE  121      89.959  45.464 -12.580  1.00 35.05      L21B N
ATOM   6901  CA  PHE  121      90.240  46.752 -13.227  1.00 37.49      L21B C
ATOM   6902  CB  PHE  121      90.054  46.649 -14.733  1.00 37.01      L21B C
ATOM   6903  CG  PHE  121      91.133  45.888 -15.418  1.00 39.94      L21B C
ATOM   6904  CD1 PHE  121      90.885  44.631 -15.950  1.00 41.17      L21B C
ATOM   6905  CD2 PHE  121      92.403  46.431 -15.546  1.00 40.30      L21B C
ATOM   6906  CE1 PHE  121      91.882  43.926 -16.601  1.00 41.70      L21B C
ATOM   6907  CE2 PHE  121      93.407  45.736 -16.193  1.00 41.18      L21B C
ATOM   6908  CZ  PHE  121      93.147  44.477 -16.725  1.00 42.12      L21B C
ATOM   6909  C   PHE  121      89.327  47.840 -12.727  1.00 37.59      L21B C
ATOM   6910  O   PHE  121      88.118  47.679 -12.717  1.00 38.34      L21B O
ATOM   6911  N   PRO  122      89.895  48.980 -12.320  1.00 33.96      L21B N
ATOM   6912  CD  PRO  122      91.343  49.211 -12.217  1.00 33.93      L21B C
ATOM   6913  CA  PRO  122      89.118  50.140 -11.849  1.00 38.29      L21B C
ATOM   6914  CB  PRO  122      90.165  51.012 -11.187  1.00 35.32      L21B C
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ATOM   6915  CG  PRO   122      91.417  50.673 -11.910  1.00 33.59      L21B C
ATOM   6916  C   PRO   122      88.425  50.864 -12.992  1.00 39.54      L21B C
ATOM   6917  O   PRO   122      88.852  50.762 -14.136  1.00 39.03      L21B O
ATOM   6918  N   PRO   123      87.360  51.623 -12.697  1.00 38.00      L21B N
ATOM   6919  CD  PRO   123      86.853  52.011 -11.371  1.00 42.45      L21B C
ATOM   6920  CA  PRO   123      86.729  52.399 -13.778  1.00 40.80      L21B C
ATOM   6921  CB  PRO   123      85.750  53.326 -13.057  1.00 41.73      L21B C
ATOM   6922  CG  PRO   123      85.552  52.698 -11.698  1.00 44.67      L21B C
ATOM   6923  C   PRO   123      87.813  53.192 -14.490  1.00 42.29      L21B C
ATOM   6924  O   PRO   123      88.806  53.588 -13.871  1.00 40.52      L21B O
ATOM   6925  N   SER   124      87.644  53.410 -15.788  1.00 44.28      L21B N
ATOM   6926  CA  SER   124      88.611  54.216 -16.506  1.00 47.54      L21B C
ATOM   6927  CB  SER   124      88.663  53.823 -17.988  1.00 47.47      L21B C
ATOM   6928  OG  SER   124      87.506  54.258 -18.684  1.00 53.94      L21B O
ATOM   6929  C   SER   124      88.267  55.697 -16.348  1.00 49.32      L21B C
ATOM   6930  O   SER   124      87.158  56.071 -15.948  1.00 49.97      L21B O
ATOM   6931  N   SER   125      89.255  56.527 -16.636  1.00 50.71      L21B N
ATOM   6932  CA  SER   125      89.127  57.964 -16.549  1.00 51.79      L21B C
ATOM   6933  CB  SER   125      90.474  58.586 -16.895  1.00 54.13      L21B C
ATOM   6934  OG  SER   125      91.447  57.553 -17.108  1.00 58.67      L21B O
ATOM   6935  C   SER   125      88.062  58.413 -17.530  1.00 52.33      L21B C
ATOM   6936  O   SER   125      87.218  59.240 -17.197  1.00 53.85      L21B O
ATOM   6937  N   GLU   126      88.093  57.852 -18.735  1.00 52.90      L21B N
ATOM   6938  CA  GLU   126      87.157  58.247 -19.780  1.00 53.19      L21B C
ATOM   6939  CB  GLU   126      87.458  57.509 -21.082  1.00 57.40      L21B C
ATOM   6940  CG  GLU   126      88.843  57.708 -21.675  1.00 62.62      L21B C
ATOM   6941  CD  GLU   126      88.903  57.183 -23.100  1.00 66.23      L21B C
ATOM   6942  OE1 GLU   126      88.015  57.561 -23.904  1.00 68.20      L21B O
ATOM   6943  OE2 GLU   126      89.822  56.392 -23.414  1.00 68.73      L21B O
ATOM   6944  C   GLU   126      85.734  57.919 -19.373  1.00 51.91      L21B C
ATOM   6945  O   GLU   126      84.833  58.750 -19.467  1.00 50.90      L21B O
ATOM   6946  N   GLU   127      85.528  56.687 -18.928  1.00 50.99      L21B N
ATOM   6947  CA  GLU   127      84.197  56.264 -18.523  1.00 49.49      L21B C
ATOM   6948  CB  GLU   127      84.213  54.811 -18.046  1.00 48.63      L21B C
ATOM   6949  CG  GLU   127      82.828  54.274 -17.767  1.00 45.52      L21B C
ATOM   6950  CD  GLU   127      82.845  53.032 -16.907  1.00 44.98      L21B C
ATOM   6951  OE1 GLU   127      81.780  52.691 -16.353  1.00 42.76      L21B O
ATOM   6952  OE2 GLU   127      83.920  52.399 -16.794  1.00 43.35      L21B O
ATOM   6953  C   GLU   127      83.656  57.171 -17.422  1.00 48.57      L21B C
ATOM   6954  O   GLU   127      82.534  57.660 -17.516  1.00 49.29      L21B O
ATOM   6955  N   LEU   128      84.447  57.408 -16.382  1.00 47.26      L21B N
ATOM   6956  CA  LEU   128      84.003  58.319 -15.337  1.00 46.49      L21B C
ATOM   6957  CB  LEU   128      85.145  58.634 -14.377  1.00 44.93      L21B C
ATOM   6958  CG  LEU   128      85.440  57.550 -13.341  1.00 44.39      L21B C
ATOM   6959  CD1 LEU   128      86.492  58.057 -12.377  1.00 42.24      L21B C
ATOM   6960  CD2 LEU   128      84.160  57.177 -12.588  1.00 43.91      L21B C
ATOM   6961  C   LEU   128      83.461  59.609 -15.948  1.00 45.72      L21B C
ATOM   6962  O   LEU   128      82.445  60.143 -15.502  1.00 44.90      L21B O
ATOM   6963  N   GLN   129      84.124  60.094 -16.991  1.00 44.74      L21B N
ATOM   6964  CA  GLN   129      83.690  61.326 -17.643  1.00 43.60      L21B C
ATOM   6965  CB  GLN   129      84.730  61.764 -18.673  1.00 44.32      L21B C
ATOM   6966  CG  GLN   129      84.757  63.251 -18.915  1.00 44.45      L21B C
ATOM   6967  CD  GLN   129      84.894  64.018 -17.632  1.00 44.59      L21B C
ATOM   6968  OE1 GLN   129      83.960  64.705 -17.184  1.00 46.48      L21B O
ATOM   6969  NE2 GLN   129      86.065  63.903 -17.014  1.00 43.44      L21B N
ATOM   6970  C   GLN   129      82.335  61.142 -18.318  1.00 43.46      L21B C
ATOM   6971  O   GLN   129      81.613  62.111 -18.567  1.00 42.25      L21B O
ATOM   6972  N   ALA   130      81.999  59.890 -18.612  1.00 43.83      L21B N
ATOM   6973  CA  ALA   130      80.723  59.562 -19.236  1.00 44.55      L21B C
ATOM   6974  CB  ALA   130      80.842  58.252 -19.998  1.00 40.95      L21B C
ATOM   6975  C   ALA   130      79.613  59.472 -18.190  1.00 45.51      L21B C
ATOM   6976  O   ALA   130      78.444  59.242 -18.516  1.00 45.69      L21B O
ATOM   6977  N   ASN   131      79.998  59.658 -16.932  1.00 46.19      L21B N
ATOM   6978  CA  ASN   131      79.057  59.676 -15.814  1.00 46.40      L21B C
ATOM   6979  CB  ASN   131      77.856  60.560 -16.116  1.00 46.67      L21B C
ATOM   6980  CG  ASN   131      77.079  60.903 -14.866  1.00 48.91      L21B C
ATOM   6981  OD1 ASN   131      77.634  60.893 -13.764  1.00 47.77      L21B O
ATOM   6982  ND2 ASN   131      75.788  61.203 -15.021  1.00 51.00      L21B N
ATOM   6983  C   ASN   131      78.572  58.279 -15.467  1.00 46.14      L21B C
ATOM   6984  O   ASN   131      77.431  58.080 -15.028  1.00 45.59      L21B O
ATOM   6985  N   LYS   132      79.456  57.313 -15.687  1.00 44.66      L21B N
ATOM   6986  CA  LYS   132      79.241  55.945 -15.265  1.00 42.08      L21B C
ATOM   6987  CB  LYS   132      78.787  55.099 -16.450  1.00 40.90      L21B C
ATOM   6988  CG  LYS   132      77.627  55.703 -17.217  1.00 43.12      L21B C
ATOM   6989  CD  LYS   132      76.291  55.233 -16.679  1.00 47.00      L21B C
ATOM   6990  CE  LYS   132      75.556  54.388 -17.718  1.00 51.53      L21B C
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ATOM   6991  NZ  LYS   132      75.127  55.214 -18.892  1.00 53.24      L21B N
ATOM   6992  C   LYS   132      80.567  55.436 -14.727  1.00 40.86      L21B C
ATOM   6993  O   LYS   132      81.625  55.974 -15.036  1.00 39.43      L21B O
ATOM   6994  N   ALA   133      80.515  54.410 -13.898  1.00 40.80      L21B N
ATOM   6995  CA  ALA   133      81.742  53.771 -13.469  1.00 40.55      L21B C
ATOM   6996  CB  ALA   133      82.155  54.284 -12.094  1.00 41.61      L21B C
ATOM   6997  C   ALA   133      81.503  52.277 -13.436  1.00 39.52      L21B C
ATOM   6998  O   ALA   133      80.407  51.827 -13.094  1.00 40.03      L21B O
ATOM   6999  N   THR   134      82.517  51.511 -13.816  1.00 37.08      L21B N
ATOM   7000  CA  THR   134      82.387  50.070 -13.826  1.00 35.24      L21B C
ATOM   7001  CB  THR   134      82.102  49.568 -15.261  1.00 34.18      L21B C
ATOM   7002  OG1 THR   134      81.076  50.373 -15.860  1.00 31.16      L21B O
ATOM   7003  CG2 THR   134      81.630  48.113 -15.229  1.00 34.12      L21B C
ATOM   7004  C   THR   134      83.660  49.413 -13.288  1.00 35.11      L21B C
ATOM   7005  O   THR   134      84.756  49.639 -13.809  1.00 34.86      L21B O
ATOM   7006  N   LEU   135      83.527  48.604 -12.240  1.00 35.01      L21B N
ATOM   7007  CA  LEU   135      84.659  47.785 -11.811  1.00 35.41      L21B C
ATOM   7008  CB  LEU   135      84.648  47.559 -10.299  1.00 35.87      L21B C
ATOM   7009  CG  LEU   135      84.344  48.751  -9.393  1.00 35.82      L21B C
ATOM   7010  CD1 LEU   135      84.432  48.303  -7.946  1.00 37.53      L21B C
ATOM   7011  CD2 LEU   135      85.307  49.859  -9.652  1.00 35.35      L21B C
ATOM   7012  C   LEU   135      84.568  46.451 -12.520  1.00 33.80      L21B C
ATOM   7013  O   LEU   135      83.529  45.820 -12.520  1.00 35.43      L21B O
ATOM   7014  N   VAL   136      85.659  46.033 -13.136  1.00 33.39      L21B N
ATOM   7015  CA  VAL   136      85.658  44.817 -13.927  1.00 33.35      L21B C
ATOM   7016  CB  VAL   136      86.196  45.094 -15.343  1.00 31.20      L21B C
ATOM   7017  CG1 VAL   136      86.377  43.785 -16.117  1.00 30.64      L21B C
ATOM   7018  CG2 VAL   136      85.222  46.009 -16.080  1.00 28.09      L21B C
ATOM   7019  C   VAL   136      86.492  43.727 -13.262  1.00 33.93      L21B C
ATOM   7020  O   VAL   136      87.718  43.823 -13.186  1.00 33.89      L21B O
ATOM   7021  N   CYS   137      85.815  42.692 -12.771  1.00 34.36      L21B N
ATOM   7022  CA  CYS   137      86.505  41.597 -12.113  1.00 36.21      L21B C
ATOM   7023  C   CYS   137      86.499  40.375 -13.001  1.00 35.27      L21B C
ATOM   7024  O   CYS   137      85.460  39.765 -13.199  1.00 34.76      L21B O
ATOM   7025  CB  CYS   137      85.848  41.264 -10.772  1.00 38.22      L21B C
ATOM   7026  SG  CYS   137      86.846  40.139  -9.739  1.00 40.11      L21B S
ATOM   7027  N   LEU   138      87.670  40.029 -13.531  1.00 35.98      L21B N
ATOM   7028  CA  LEU   138      87.815  38.912 -14.454  1.00 38.04      L21B C
ATOM   7029  CB  LEU   138      88.747  39.322 -15.594  1.00 37.69      L21B C
ATOM   7030  CG  LEU   138      88.403  40.638 -16.312  1.00 39.81      L21B C
ATOM   7031  CD1 LEU   138      89.536  41.044 -17.241  1.00 40.38      L21B C
ATOM   7032  CD2 LEU   138      87.129  40.481 -17.103  1.00 39.74      L21B C
ATOM   7033  C   LEU   138      88.367  37.670 -13.725  1.00 39.64      L21B C
ATOM   7034  O   LEU   138      89.270  37.784 -12.889  1.00 41.42      L21B O
ATOM   7035  N   ILE   139      87.824  36.490 -14.030  1.00 38.47      L21B N
ATOM   7036  CA  ILE   139      88.251  35.268 -13.351  1.00 38.43      L21B C
ATOM   7037  CB  ILE   139      87.150  34.756 -12.429  1.00 37.11      L21B C
ATOM   7038  CG2 ILE   139      87.707  33.697 -11.485  1.00 38.23      L21B C
ATOM   7039  CG1 ILE   139      86.581  35.914 -11.627  1.00 36.92      L21B C
ATOM   7040  CD1 ILE   139      85.608  35.472 -10.583  1.00 38.37      L21B C
ATOM   7041  C   ILE   139      88.618  34.150 -14.335  1.00 38.50      L21B C
ATOM   7042  O   ILE   139      87.834  33.819 -15.225  1.00 36.72      L21B O
ATOM   7043  N   SER   140      89.803  33.564 -14.172  1.00 39.81      L21B N
ATOM   7044  CA  SER   140      90.312  32.604 -15.156  1.00 42.70      L21B C
ATOM   7045  CB  SER   140      91.266  33.292 -16.145  1.00 42.39      L21B C
ATOM   7046  OG  SER   140      92.065  34.270 -15.498  1.00 43.52      L21B O
ATOM   7047  C   SER   140      91.020  31.398 -14.564  1.00 43.55      L21B C
ATOM   7048  O   SER   140      91.514  31.441 -13.432  1.00 43.83      L21B O
ATOM   7049  N   ASP   141      91.055  30.320 -15.344  1.00 44.57      L21B N
ATOM   7050  CA  ASP   141      91.910  29.173 -15.060  1.00 46.96      L21B C
ATOM   7051  CB  ASP   141      93.388  29.589 -15.151  1.00 49.43      L21B C
ATOM   7052  CG  ASP   141      93.753  30.153 -16.519  1.00 52.67      L21B C
ATOM   7053  OD1 ASP   141      93.943  31.388 -16.623  1.00 55.09      L21B O
ATOM   7054  OD2 ASP   141      93.843  29.362 -17.492  1.00 54.16      L21B O
ATOM   7055  C   ASP   141      91.626  28.547 -13.697  1.00 47.35      L21B C
ATOM   7056  O   ASP   141      92.510  28.431 -12.853  1.00 47.00      L21B O
ATOM   7057  N   PHE   142      90.389  28.134 -13.481  1.00 49.13      L21B N
ATOM   7058  CA  PHE   142      90.066  27.424 -12.260  1.00 51.26      L21B C
ATOM   7059  CB  PHE   142      89.306  28.349 -11.315  1.00 50.93      L21B C
ATOM   7060  CG  PHE   142      88.015  28.882 -11.885  1.00 52.14      L21B C
ATOM   7061  CD1 PHE   142      86.839  28.146 -11.790  1.00 51.98      L21B C
ATOM   7062  CD2 PHE   142      87.960  30.142 -12.457  1.00 51.72      L21B C
ATOM   7063  CE1 PHE   142      85.641  28.661 -12.245  1.00 49.40      L21B C
ATOM   7064  CE2 PHE   142      86.767  30.658 -12.913  1.00 49.64      L21B C
ATOM   7065  CZ  PHE   142      85.608  29.917 -12.804  1.00 50.17      L21B C
ATOM   7066  C   PHE   142      89.255  26.166 -12.561  1.00 51.68      L21B C
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ATOM   7067  O   PHE   142      88.654  26.058 -13.626  1.00 51.50       L21B O
ATOM   7068  N   TYR   143      89.267  25.218 -11.625  1.00 52.56       L21B N
ATOM   7069  CA  TYR   143      88.530  23.962 -11.760  1.00 54.58       L21B C
ATOM   7070  CB  TYR   143      89.282  23.010 -12.699  1.00 56.96       L21B C
ATOM   7071  CG  TYR   143      88.523  21.763 -13.117  1.00 59.81       L21B C
ATOM   7072  CD1 TYR   143      88.524  20.618 -12.324  1.00 62.38       L21B C
ATOM   7073  CE1 TYR   143      87.865  19.450 -12.731  1.00 63.84       L21B C
ATOM   7074  CD2 TYR   143      87.844  21.717 -14.327  1.00 60.41       L21B C
ATOM   7075  CE2 TYR   143      87.185  20.563 -14.744  1.00 63.55       L21B C
ATOM   7076  CZ  TYR   143      87.198  19.431 -13.943  1.00 64.86       L21B C
ATOM   7077  OH  TYR   143      86.534  18.291 -14.356  1.00 65.40       L21B O
ATOM   7078  C   TYR   143      88.382  23.328 -10.378  1.00 53.01       L21B C
ATOM   7079  O   TYR   143      89.303  23.365  -9.569  1.00 53.42       L21B O
ATOM   7080  N   PRO   144      87.206  22.759 -10.079  1.00 50.74       L21B N
ATOM   7081  CD  PRO   144      86.972  22.124  -8.767  1.00 49.09       L21B C
ATOM   7082  CA  PRO   144      86.003  22.734 -10.923  1.00 49.32       L21B C
ATOM   7083  CB  PRO   144      85.062  21.804 -10.164  1.00 47.39       L21B C
ATOM   7084  CG  PRO   144      85.478  21.930  -8.737  1.00 46.20       L21B C
ATOM   7085  C   PRO   144      85.382  24.130 -11.153  1.00 47.94       L21B C
ATOM   7086  O   PRO   144      85.702  25.088 -10.440  1.00 46.61       L21B O
ATOM   7087  N   GLY   145      84.501  24.228 -12.152  1.00 46.23       L21B N
ATOM   7088  CA  GLY   145      83.958  25.512 -12.578  1.00 42.95       L21B C
ATOM   7089  C   GLY   145      82.812  26.070 -11.742  1.00 41.27       L21B C
ATOM   7090  O   GLY   145      81.719  26.310 -12.250  1.00 40.44       L21B O
ATOM   7091  N   ALA   146      83.062  26.275 -10.453  1.00 39.59       L21B N
ATOM   7092  CA  ALA   146      82.094  26.915  -9.571  1.00 38.70       L21B C
ATOM   7093  CB  ALA   146      81.366  25.871  -8.763  1.00 31.97       L21B C
ATOM   7094  C   ALA   146      82.779  27.922  -8.637  1.00 39.60       L21B C
ATOM   7095  O   ALA   146      83.631  27.551  -7.833  1.00 41.88       L21B O
ATOM   7096  N   VAL   147      82.417  29.197  -8.755  1.00 38.94       L21B N
ATOM   7097  CA  VAL   147      82.985  30.227  -7.894  1.00 39.15       L21B C
ATOM   7098  CB  VAL   147      83.970  31.166  -8.630  1.00 40.72       L21B C
ATOM   7099  CG1 VAL   147      85.144  30.392  -9.186  1.00 40.44       L21B C
ATOM   7100  CG2 VAL   147      83.229  31.921  -9.733  1.00 40.31       L21B C
ATOM   7101  C   VAL   147      81.844  31.100  -7.439  1.00 38.68       L21B C
ATOM   7102  O   VAL   147      80.803  31.151  -8.080  1.00 41.11       L21B O
ATOM   7103  N   THR   148      82.033  31.797  -6.335  1.00 36.37       L21B N
ATOM   7104  CA  THR   148      81.051  32.778  -5.955  1.00 36.67       L21B C
ATOM   7105  CB  THR   148      80.323  32.336  -4.659  1.00 35.50       L21B C
ATOM   7106  OG1 THR   148      80.850  33.034  -3.521  1.00 34.72       L21B O
ATOM   7107  CG2 THR   148      80.505  30.836  -4.467  1.00 37.45       L21B C
ATOM   7108  C   THR   148      81.807  34.102  -5.783  1.00 37.12       L21B C
ATOM   7109  O   THR   148      82.966  34.112  -5.342  1.00 36.84       L21B O
ATOM   7110  N   VAL   149      81.178  35.207  -6.169  1.00 33.24       L21B N
ATOM   7111  CA  VAL   149      81.858  36.472  -6.104  1.00 33.40       L21B C
ATOM   7112  CB  VAL   149      81.907  37.135  -7.485  1.00 31.91       L21B C
ATOM   7113  CG1 VAL   149      82.473  38.539  -7.369  1.00 33.40       L21B C
ATOM   7114  CG2 VAL   149      82.767  36.321  -8.404  1.00 30.80       L21B C
ATOM   7115  C   VAL   149      81.145  37.370  -5.121  1.00 34.21       L21B C
ATOM   7116  O   VAL   149      79.944  37.244  -4.921  1.00 34.91       L21B O
ATOM   7117  N   ALA   150      81.886  38.264  -4.487  1.00 33.86       L21B N
ATOM   7118  CA  ALA   150      81.280  39.225  -3.585  1.00 35.73       L21B C
ATOM   7119  CB  ALA   150      81.210  38.656  -2.188  1.00 33.79       L21B C
ATOM   7120  C   ALA   150      82.112  40.501  -3.597  1.00 39.22       L21B C
ATOM   7121  O   ALA   150      83.349  40.462  -3.711  1.00 40.31       L21B O
ATOM   7122  N   TRP   151      81.430  41.633  -3.487  1.00 40.11       L21B N
ATOM   7123  CA  TRP   151      82.080  42.922  -3.632  1.00 41.54       L21B C
ATOM   7124  CB  TRP   151      81.393  43.745  -4.729  1.00 38.77       L21B C
ATOM   7125  CG  TRP   151      81.582  43.201  -6.112  1.00 36.67       L21B C
ATOM   7126  CD2 TRP   151      82.611  43.564  -7.048  1.00 36.37       L21B C
ATOM   7127  CE2 TRP   151      82.391  42.819  -8.219  1.00 34.19       L21B C
ATOM   7128  CE3 TRP   151      83.694  44.448  -7.005  1.00 35.66       L21B C
ATOM   7129  CD1 TRP   151      80.809  42.277  -6.737  1.00 35.59       L21B C
ATOM   7130  NE1 TRP   151      81.286  42.039  -8.006  1.00 35.04       L21B N
ATOM   7131  CZ2 TRP   151      83.205  42.928  -9.330  1.00 34.35       L21B C
ATOM   7132  CZ3 TRP   151      84.503  44.553  -8.107  1.00 35.09       L21B C
ATOM   7133  CH2 TRP   151      84.257  43.798  -9.256  1.00 35.84       L21B C
ATOM   7134  C   TRP   151      81.997  43.664  -2.316  1.00 44.09       L21B C
ATOM   7135  O   TRP   151      80.964  43.656  -1.644  1.00 45.40       L21B O
ATOM   7136  N   LYS   152      83.092  44.308  -1.946  1.00 46.45       L21B N
ATOM   7137  CA  LYS   152      83.072  45.197  -0.811  1.00 48.60       L21B C
ATOM   7138  CB  LYS   152      84.092  44.751   0.225  1.00 48.03       L21B C
ATOM   7139  CG  LYS   152      83.871  43.340   0.723  1.00 50.00       L21B C
ATOM   7140  CD  LYS   152      83.032  43.305   2.003  1.00 51.32       L21B C
ATOM   7141  CE  LYS   152      82.767  41.869   2.424  1.00 52.22       L21B C
ATOM   7142  NZ  LYS   152      82.022  41.119   1.373  1.00 55.40       L21B N
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ATOM   7143  C   LYS   152      83.390  46.601  -1.281  1.00 50.99      L21B C
ATOM   7144  O   LYS   152      84.217  46.799  -2.181  1.00 51.75      L21B O
ATOM   7145  N   ALA   153      82.701  47.565  -0.680  1.00 52.20      L21B N
ATOM   7146  CA  ALA   153      83.076  48.961  -0.762  1.00 53.01      L21B C
ATOM   7147  CB  ALA   153      81.854  49.802  -1.069  1.00 53.76      L21B C
ATOM   7148  C   ALA   153      83.664  49.342   0.596  1.00 53.38      L21B C
ATOM   7149  O   ALA   153      82.970  49.338   1.605  1.00 53.17      L21B O
ATOM   7150  N   ASP   154      84.950  49.671   0.610  1.00 55.41      L21B N
ATOM   7151  CA  ASP   154      85.732  49.644   1.840  1.00 56.87      L21B C
ATOM   7152  CB  ASP   154      85.183  50.652   2.856  1.00 60.15      L21B C
ATOM   7153  CG  ASP   154      85.664  52.060   2.579  1.00 63.17      L21B C
ATOM   7154  OD1 ASP   154      86.880  52.204   2.319  1.00 66.19      L21B O
ATOM   7155  OD2 ASP   154      84.842  53.010   2.609  1.00 63.31      L21B O
ATOM   7156  C   ASP   154      85.659  48.238   2.398  1.00 56.82      L21B C
ATOM   7157  O   ASP   154      86.161  47.297   1.790  1.00 54.87      L21B O
ATOM   7158  N   SER   155      85.010  48.090   3.545  1.00 57.77      L21B N
ATOM   7159  CA  SER   155      84.814  46.771   4.112  1.00 58.15      L21B C
ATOM   7160  CB  SER   155      85.331  46.744   5.542  1.00 57.73      L21B C
ATOM   7161  OG  SER   155      86.728  46.519   5.538  1.00 60.83      L21B O
ATOM   7162  C   SER   155      83.367  46.327   4.068  1.00 58.08      L21B C
ATOM   7163  O   SER   155      83.069  45.151   4.217  1.00 59.53      L21B O
ATOM   7164  N   SER   156      82.461  47.267   3.858  1.00 58.33      L21B N
ATOM   7165  CA  SER   156      81.057  46.918   3.777  1.00 59.90      L21B C
ATOM   7166  CB  SER   156      80.201  48.162   3.965  1.00 60.53      L21B C
ATOM   7167  OG  SER   156      80.336  48.660   5.283  1.00 59.84      L21B O
ATOM   7168  C   SER   156      80.733  46.260   2.445  1.00 60.68      L21B C
ATOM   7169  O   SER   156      81.328  46.583   1.422  1.00 61.89      L21B O
ATOM   7170  N   PRO   157      79.792  45.304   2.453  1.00 60.88      L21B N
ATOM   7171  CD  PRO   157      79.262  44.713   3.690  1.00 58.20      L21B C
ATOM   7172  CA  PRO   157      79.348  44.547   1.278  1.00 60.26      L21B C
ATOM   7173  CB  PRO   157      78.687  43.304   1.886  1.00 58.77      L21B C
ATOM   7174  CG  PRO   157      79.155  43.277   3.324  1.00 56.44      L21B C
ATOM   7175  C   PRO   157      78.402  45.303   0.334  1.00 59.58      L21B C
ATOM   7176  O   PRO   157      77.472  45.984   0.763  1.00 57.31      L21B O
ATOM   7177  N   VAL   158      78.657  45.150  -0.959  1.00 59.32      L21B N
ATOM   7178  CA  VAL   158      77.915  45.844  -2.002  1.00 59.47      L21B C
ATOM   7179  CB  VAL   158      78.700  45.791  -3.331  1.00 57.95      L21B C
ATOM   7180  CG1 VAL   158      77.839  46.290  -4.469  1.00 54.31      L21B C
ATOM   7181  CG2 VAL   158      79.975  46.617  -3.213  1.00 53.69      L21B C
ATOM   7182  C   VAL   158      76.536  45.218  -2.204  1.00 60.73      L21B C
ATOM   7183  O   VAL   158      76.414  44.001  -2.333  1.00 61.06      L21B O
ATOM   7184  N   LYS   159      75.505  46.061  -2.244  1.00 62.19      L21B N
ATOM   7185  CA  LYS   159      74.113  45.602  -2.315  1.00 61.60      L21B C
ATOM   7186  CB  LYS   159      73.236  46.399  -1.341  1.00 63.72      L21B C
ATOM   7187  CG  LYS   159      73.455  46.090   0.126  1.00 69.06      L21B C
ATOM   7188  CD  LYS   159      72.644  47.037   0.998  1.00 75.91      L21B C
ATOM   7189  CE  LYS   159      73.000  46.892   2.478  1.00 82.57      L21B C
ATOM   7190  NZ  LYS   159      72.140  47.750   3.366  1.00 87.68      L21B N
ATOM   7191  C   LYS   159      73.462  45.674  -3.699  1.00 58.86      L21B C
ATOM   7192  O   LYS   159      72.303  45.300  -3.847  1.00 57.81      L21B O
ATOM   7193  N   ALA   160      74.186  46.165  -4.701  1.00 55.78      L21B N
ATOM   7194  CA  ALA   160      73.587  46.415  -6.008  1.00 52.62      L21B C
ATOM   7195  CB  ALA   160      72.592  47.559  -5.900  1.00 51.57      L21B C
ATOM   7196  C   ALA   160      74.622  46.724  -7.090  1.00 51.55      L21B C
ATOM   7197  O   ALA   160      75.718  47.210  -6.803  1.00 52.32      L21B O
ATOM   7198  N   GLY   161      74.269  46.441  -8.339  1.00 49.63      L21B N
ATOM   7199  CA  GLY   161      75.115  46.834  -9.448  1.00 47.88      L21B C
ATOM   7200  C   GLY   161      75.947  45.670  -9.917  1.00 46.51      L21B C
ATOM   7201  O   GLY   161      76.533  45.684 -11.000  1.00 47.18      L21B O
ATOM   7202  N   VAL   162      75.991  44.642  -9.091  1.00 45.68      L21B N
ATOM   7203  CA  VAL   162      76.766  43.467  -9.420  1.00 46.39      L21B C
ATOM   7204  CB  VAL   162      76.994  42.592  -8.177  1.00 45.36      L21B C
ATOM   7205  CG1 VAL   162      77.924  41.457  -8.522  1.00 45.18      L21B C
ATOM   7206  CG2 VAL   162      77.563  43.423  -7.048  1.00 43.58      L21B C
ATOM   7207  C   VAL   162      76.066  42.636 -10.489  1.00 46.49      L21B C
ATOM   7208  O   VAL   162      74.848  42.523 -10.510  1.00 46.00      L21B O
ATOM   7209  N   GLU   163      76.852  42.058 -11.382  1.00 47.79      L21B N
ATOM   7210  CA  GLU   163      76.306  41.230 -12.440  1.00 49.24      L21B C
ATOM   7211  CB  GLU   163      75.884  42.106 -13.625  1.00 52.12      L21B C
ATOM   7212  CG  GLU   163      74.748  41.536 -14.443  1.00 60.05      L21B C
ATOM   7213  CD  GLU   163      73.390  41.886 -13.864  1.00 65.24      L21B C
ATOM   7214  OE1 GLU   163      72.774  41.012 -13.209  1.00 67.90      L21B O
ATOM   7215  OE2 GLU   163      72.940  43.038 -14.068  1.00 70.08      L21B O
ATOM   7216  C   GLU   163      77.401  40.260 -12.865  1.00 46.11      L21B C
ATOM   7217  O   GLU   163      78.410  40.682 -13.419  1.00 47.48      L21B O
ATOM   7218  N   THR   164      77.206  38.970 -12.599  1.00 41.78      L21B N
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ATOM   7219  CA  THR  164      78.282  37.988 -12.730  1.00 38.50      L21B C
ATOM   7220  CB  THR  164      78.531  37.248 -11.400  1.00 34.50      L21B C
ATOM   7221  OG1 THR  164      78.699  38.199 -10.346  1.00 30.64      L21B O
ATOM   7222  CG2 THR  164      79.756  36.372 -11.495  1.00 28.00      L21B C
ATOM   7223  C   THR  164      77.871  36.955 -13.756  1.00 38.26      L21B C
ATOM   7224  O   THR  164      76.696  36.638 -13.868  1.00 39.75      L21B O
ATOM   7225  N   THR  165      78.838  36.416 -14.487  1.00 37.96      L21B N
ATOM   7226  CA  THR  165      78.562  35.385 -15.483  1.00 37.83      L21B C
ATOM   7227  CB  THR  165      79.599  35.420 -16.618  1.00 34.80      L21B C
ATOM   7228  OG1 THR  165      80.880  35.040 -16.097  1.00 36.93      L21B O
ATOM   7229  CG2 THR  165      79.709  36.825 -17.215  1.00 31.26      L21B C
ATOM   7230  C   THR  165      78.593  33.985 -14.866  1.00 37.21      L21B C
ATOM   7231  O   THR  165      79.114  33.770 -13.777  1.00 39.28      L21B O
ATOM   7232  N   THR  166      78.036  33.019 -15.565  1.00 36.76      L21B N
ATOM   7233  CA  THR  166      78.243  31.645 -15.168  1.00 38.24      L21B C
ATOM   7234  CB  THR  166      77.106  30.778 -15.660  1.00 34.50      L21B C
ATOM   7235  OG1 THR  166      77.096  30.796 -17.089  1.00 34.16      L21B O
ATOM   7236  CG2 THR  166      75.787  31.322 -15.164  1.00 33.33      L21B C
ATOM   7237  C   THR  166      79.537  31.194 -15.827  1.00 37.53      L21B C
ATOM   7238  O   THR  166      79.864  31.623 -16.932  1.00 36.25      L21B O
ATOM   7239  N   PRO  167      80.299  30.325 -15.153  1.00 37.69      L21B N
ATOM   7240  CD  PRO  167      80.022  29.728 -13.837  1.00 37.82      L21B C
ATOM   7241  CA  PRO  167      81.614  29.933 -15.668  1.00 41.45      L21B C
ATOM   7242  CB  PRO  167      82.133  28.968 -14.613  1.00 38.56      L21B C
ATOM   7243  CG  PRO  167      81.376  29.323 -13.368  1.00 37.09      L21B C
ATOM   7244  C   PRO  167      81.473  29.277 -17.029  1.00 42.27      L21B C
ATOM   7245  O   PRO  167      80.425  28.735 -17.341  1.00 44.62      L21B O
ATOM   7246  N   SER  168      82.514  29.334 -17.845  1.00 43.91      L21B N
ATOM   7247  CA  SER  168      82.479  28.642 -19.123  1.00 49.02      L21B C
ATOM   7248  CB  SER  168      81.934  29.574 -20.200  1.00 48.31      L21B C
ATOM   7249  OG  SER  168      82.776  30.696 -20.353  1.00 51.04      L21B O
ATOM   7250  C   SER  168      83.860  28.112 -19.517  1.00 52.43      L21B C
ATOM   7251  O   SER  168      84.858  28.810 -19.384  1.00 51.73      L21B O
ATOM   7252  N   LYS  169      83.907  26.866 -19.981  1.00 56.92      L21B N
ATOM   7253  CA  LYS  169      85.169  26.213 -20.283  1.00 61.14      L21B C
ATOM   7254  CB  LYS  169      84.918  24.845 -20.924  1.00 62.84      L21B C
ATOM   7255  CG  LYS  169      84.830  23.687 -19.932  1.00 66.49      L21B C
ATOM   7256  CD  LYS  169      85.821  22.565 -20.294  1.00 70.79      L21B C
ATOM   7257  CE  LYS  169      86.088  21.615 -19.117  1.00 73.34      L21B C
ATOM   7258  NZ  LYS  169      84.856  20.937 -18.570  1.00 78.76      L21B N
ATOM   7259  C   LYS  169      85.955  27.092 -21.235  1.00 62.66      L21B C
ATOM   7260  O   LYS  169      85.383  27.720 -22.115  1.00 63.23      L21B O
ATOM   7261  N   GLN  170      87.269  27.141 -21.053  1.00 64.67      L21B N
ATOM   7262  CA  GLN  170      88.105  28.052 -21.828  1.00 65.86      L21B C
ATOM   7263  CB  GLN  170      89.262  28.556 -20.967  1.00 66.96      L21B C
ATOM   7264  CG  GLN  170      88.852  29.309 -19.725  1.00 68.32      L21B C
ATOM   7265  CD  GLN  170      90.050  29.889 -18.995  1.00 69.91      L21B C
ATOM   7266  OE1 GLN  170      90.010  30.118 -17.783  1.00 71.16      L21B O
ATOM   7267  NE2 GLN  170      91.127  30.130 -19.734  1.00 71.33      L21B N
ATOM   7268  C   GLN  170      88.677  27.413 -23.097  1.00 66.50      L21B C
ATOM   7269  O   GLN  170      87.997  27.295 -24.125  1.00 66.61      L21B O
ATOM   7270  N   SER  171      89.946  27.027 -23.009  1.00 66.58      L21B N
ATOM   7271  CA  SER  171      90.641  26.325 -24.081  1.00 67.32      L21B C
ATOM   7272  CB  SER  171      91.243  27.318 -25.076  1.00 68.07      L21B C
ATOM   7273  OG  SER  171      90.258  27.775 -25.985  1.00 70.61      L21B O
ATOM   7274  C   SER  171      91.744  25.474 -23.466  1.00 66.68      L21B C
ATOM   7275  O   SER  171      92.026  24.376 -23.938  1.00 65.89      L21B O
ATOM   7276  N   ASN  172      92.361  25.994 -22.408  1.00 65.46      L21B N
ATOM   7277  CA  ASN  172      93.171  25.173 -21.517  1.00 63.92      L21B C
ATOM   7278  CB  ASN  172      93.956  26.056 -20.544  1.00 62.95      L21B C
ATOM   7279  CG  ASN  172      93.058  26.891 -19.652  1.00 62.55      L21B C
ATOM   7280  OD1 ASN  172      92.050  27.431 -20.100  1.00 62.38      L21B O
ATOM   7281  ND2 ASN  172      93.426  27.003 -18.378  1.00 61.56      L21B N
ATOM   7282  C   ASN  172      92.230  24.245 -20.754  1.00 63.74      L21B C
ATOM   7283  O   ASN  172      92.646  23.450 -19.916  1.00 63.97      L21B O
ATOM   7284  N   ASN  173      90.946  24.363 -21.062  1.00 63.55      L21B N
ATOM   7285  CA  ASN  173      89.937  23.472 -20.518  1.00 62.96      L21B C
ATOM   7286  CB  ASN  173      90.350  22.014 -20.725  1.00 63.60      L21B C
ATOM   7287  CG  ASN  173      89.203  21.058 -20.483  1.00 65.50      L21B C
ATOM   7288  OD1 ASN  173      89.023  20.565 -19.366  1.00 67.22      L21B O
ATOM   7289  ND2 ASN  173      88.407  20.799 -21.525  1.00 65.19      L21B N
ATOM   7290  C   ASN  173      89.646  23.724 -19.037  1.00 61.57      L21B C
ATOM   7291  O   ASN  173      88.868  22.990 -18.415  1.00 60.70      L21B O
ATOM   7292  N   LYS  174      90.268  24.758 -18.474  1.00 58.80      L21B N
ATOM   7293  CA  LYS  174      89.852  25.262 -17.173  1.00 57.03      L21B C
ATOM   7294  CB  LYS  174      91.047  25.873 -16.436  1.00 56.43      L21B C
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ATOM   7295  CG  LYS   174      92.179  24.893 -16.202  1.00 54.88      L21B C
ATOM   7296  CD  LYS   174      93.293  25.524 -15.389  1.00 55.65      L21B C
ATOM   7297  CE  LYS   174      94.474  24.578 -15.209  1.00 54.27      L21B C
ATOM   7298  NZ  LYS   174      95.762  25.322 -15.121  1.00 55.04      L21B N
ATOM   7299  C   LYS   174      88.739  26.302 -17.352  1.00 56.01      L21B C
ATOM   7300  O   LYS   174      88.342  26.607 -18.482  1.00 54.56      L21B O
ATOM   7301  N   TYR   175      88.227  26.835 -16.245  1.00 54.93      L21B N
ATOM   7302  CA  TYR   175      87.035  27.680 -16.309  1.00 55.31      L21B C
ATOM   7303  CB  TYR   175      85.965  27.195 -15.319  1.00 57.78      L21B C
ATOM   7304  CG  TYR   175      85.217  25.953 -15.760  1.00 60.75      L21B C
ATOM   7305  CD1 TYR   175      84.034  26.051 -16.487  1.00 61.53      L21B C
ATOM   7306  CE1 TYR   175      83.348  24.923 -16.896  1.00 63.42      L21B C
ATOM   7307  CD2 TYR   175      85.695  24.685 -15.452  1.00 60.53      L21B C
ATOM   7308  CE2 TYR   175      85.017  23.552 -15.854  1.00 63.85      L21B C
ATOM   7309  CZ  TYR   175      83.845  23.672 -16.578  1.00 63.99      L21B C
ATOM   7310  OH  TYR   175      83.186  22.537 -16.995  1.00 64.21      L21B O
ATOM   7311  C   TYR   175      87.316  29.158 -16.058  1.00 53.03      L21B C
ATOM   7312  O   TYR   175      88.237  29.523 -15.323  1.00 53.97      L21B O
ATOM   7313  N   ALA   176      86.514  30.008 -16.686  1.00 48.30      L21B N
ATOM   7314  CA  ALA   176      86.626  31.440 -16.486  1.00 43.86      L21B C
ATOM   7315  CB  ALA   176      87.113  32.113 -17.765  1.00 41.69      L21B C
ATOM   7316  C   ALA   176      85.264  31.985 -16.087  1.00 41.19      L21B C
ATOM   7317  O   ALA   176      84.241  31.345 -16.310  1.00 40.23      L21B O
ATOM   7318  N   ALA   177      85.255  33.161 -15.480  1.00 37.62      L21B N
ATOM   7319  CA  ALA   177      84.012  33.839 -15.198  1.00 36.67      L21B C
ATOM   7320  CB  ALA   177      83.549  33.496 -13.807  1.00 36.19      L21B C
ATOM   7321  C   ALA   177      84.303  35.322 -15.312  1.00 36.41      L21B C
ATOM   7322  O   ALA   177      85.440  35.694 -15.603  1.00 38.70      L21B O
ATOM   7323  N   SER   178      83.296  36.169 -15.096  1.00 33.97      L21B N
ATOM   7324  CA  SER   178      83.560  37.567 -14.777  1.00 30.19      L21B C
ATOM   7325  CB  SER   178      83.893  38.359 -16.039  1.00 29.61      L21B C
ATOM   7326  OG  SER   178      82.756  38.462 -16.878  1.00 31.45      L21B O
ATOM   7327  C   SER   178      82.376  38.206 -14.076  1.00 29.28      L21B C
ATOM   7328  O   SER   178      81.254  37.704 -14.138  1.00 28.35      L21B O
ATOM   7329  N   SER   179      82.635  39.330 -13.420  1.00 28.18      L21B N
ATOM   7330  CA  SER   179      81.663  39.969 -12.551  1.00 28.05      L21B C
ATOM   7331  CB  SER   179      81.939  39.533 -11.099  1.00 25.74      L21B C
ATOM   7332  OG  SER   179      81.115  40.215 -10.164  1.00 25.59      L21B O
ATOM   7333  C   SER   179      81.785  41.497 -12.707  1.00 28.42      L21B C
ATOM   7334  O   SER   179      82.882  42.050 -12.632  1.00 30.29      L21B O
ATOM   7335  N   TYR   180      80.670  42.184 -12.919  1.00 28.81      L21B N
ATOM   7336  CA  TYR   180      80.718  43.628 -13.137  1.00 29.20      L21B C
ATOM   7337  CB  TYR   180      80.079  43.980 -14.493  1.00 25.61      L21B C
ATOM   7338  CG  TYR   180      80.858  43.465 -15.684  1.00 22.04      L21B C
ATOM   7339  CD1 TYR   180      80.891  42.115 -15.973  1.00 21.54      L21B C
ATOM   7340  CE1 TYR   180      81.619  41.623 -17.041  1.00 24.06      L21B C
ATOM   7341  CD2 TYR   180      81.585  44.325 -16.503  1.00 22.08      L21B C
ATOM   7342  CE2 TYR   180      82.332  43.841 -17.586  1.00 23.42      L21B C
ATOM   7343  CZ  TYR   180      82.341  42.484 -17.849  1.00 25.10      L21B C
ATOM   7344  OH  TYR   180      83.053  41.964 -18.914  1.00 26.40      L21B O
ATOM   7345  C   TYR   180      80.017  44.396 -12.017  1.00 29.98      L21B C
ATOM   7346  O   TYR   180      78.879  44.115 -11.665  1.00 30.59      L21B O
ATOM   7347  N   LEU   181      80.701  45.369 -11.445  1.00 31.66      L21B N
ATOM   7348  CA  LEU   181      80.075  46.194 -10.434  1.00 34.40      L21B C
ATOM   7349  CB  LEU   181      80.950  46.241  -9.178  1.00 35.91      L21B C
ATOM   7350  CG  LEU   181      80.622  47.301  -8.118  1.00 37.29      L21B C
ATOM   7351  CD1 LEU   181      79.141  47.276  -7.792  1.00 38.10      L21B C
ATOM   7352  CD2 LEU   181      81.458  47.046  -6.874  1.00 35.95      L21B C
ATOM   7353  C   LEU   181      79.860  47.593 -11.007  1.00 35.22      L21B C
ATOM   7354  O   LEU   181      80.823  48.271 -11.396  1.00 35.53      L21B O
ATOM   7355  N   SER   182      78.591  48.001 -11.072  1.00 34.30      L21B N
ATOM   7356  CA  SER   182      78.195  49.265 -11.687  1.00 34.46      L21B C
ATOM   7357  CB  SER   182      76.884  49.110 -12.448  1.00 33.20      L21B C
ATOM   7358  OG  SER   182      77.030  48.265 -13.568  1.00 36.65      L21B O
ATOM   7359  C   SER   182      78.001  50.314 -10.620  1.00 35.64      L21B C
ATOM   7360  O   SER   182      77.212  50.135  -9.687  1.00 37.03      L21B O
ATOM   7361  N   LEU   183      78.717  51.416 -10.770  1.00 35.80      L21B N
ATOM   7362  CA  LEU   183      78.703  52.494  -9.796  1.00 36.71      L21B C
ATOM   7363  CB  LEU   183      80.101  52.637  -9.193  1.00 32.29      L21B C
ATOM   7364  CG  LEU   183      80.297  51.602  -8.101  1.00 32.15      L21B C
ATOM   7365  CD1 LEU   183      81.726  51.602  -7.616  1.00 31.53      L21B C
ATOM   7366  CD2 LEU   183      79.335  51.923  -6.969  1.00 30.51      L21B C
ATOM   7367  C   LEU   183      78.291  53.790 -10.486  1.00 37.88      L21B C
ATOM   7368  O   LEU   183      78.384  53.896 -11.719  1.00 41.35      L21B O
ATOM   7369  N   THR   184      77.836  54.769  -9.708  1.00 37.42      L21B N
ATOM   7370  CA  THR   184      77.936  56.165 -10.137  1.00 36.46      L21B C
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ATOM	7371	CB	THR	184	77.002	57.095	-9.338	1.00	34.03	L21B C
ATOM	7372	OG1	THR	184	77.609	57.385	-8.073	1.00	32.25	L21B O
ATOM	7373	CG2	THR	184	75.644	56.460	-9.121	1.00	27.17	L21B C
ATOM	7374	C	THR	184	79.369	56.584	-9.807	1.00	37.89	L21B C
ATOM	7375	O	THR	184	80.027	55.952	-8.984	1.00	38.09	L21B O
ATOM	7376	N	PRO	185	79.867	57.664	-10.430	1.00	40.32	L21B N
ATOM	7377	CD	PRO	185	79.307	58.350	-11.603	1.00	38.82	L21B C
ATOM	7378	CA	PRO	185	81.209	58.171	-10.093	1.00	41.63	L21B C
ATOM	7379	CB	PRO	185	81.441	59.272	-11.113	1.00	37.99	L21B C
ATOM	7380	CG	PRO	185	80.532	58.935	-12.234	1.00	38.54	L21B C
ATOM	7381	C	PRO	185	81.288	58.701	-8.670	1.00	43.60	L21B C
ATOM	7382	O	PRO	185	82.314	58.619	-8.008	1.00	43.46	L21B O
ATOM	7383	N	GLU	186	80.178	59.239	-8.204	1.00	48.02	L21B N
ATOM	7384	CA	GLU	186	80.127	59.827	-6.887	1.00	53.68	L21B C
ATOM	7385	CB	GLU	186	78.767	60.491	-6.677	1.00	58.48	L21B C
ATOM	7386	CG	GLU	186	78.455	61.609	-7.690	1.00	66.64	L21B C
ATOM	7387	CD	GLU	186	78.399	61.126	-9.148	1.00	70.44	L21B C
ATOM	7388	OE1	GLU	186	78.031	59.955	-9.384	1.00	72.48	L21B O
ATOM	7389	OE2	GLU	186	78.727	61.930	-10.057	1.00	73.54	L21B O
ATOM	7390	C	GLU	186	80.360	58.748	-5.851	1.00	54.01	L21B C
ATOM	7391	O	GLU	186	81.019	58.978	-4.841	1.00	55.79	L21B O
ATOM	7392	N	GLN	187	79.830	57.558	-6.103	1.00	53.63	L21B N
ATOM	7393	CA	GLN	187	79.934	56.503	-5.109	1.00	51.43	L21B C
ATOM	7394	CB	GLN	187	78.681	55.628	-5.131	1.00	50.42	L21B C
ATOM	7395	CG	GLN	187	78.234	55.226	-6.505	1.00	50.59	L21B C
ATOM	7396	CD	GLN	187	76.767	54.823	-6.554	1.00	50.84	L21B C
ATOM	7397	OE1	GLN	187	76.405	53.872	-7.251	1.00	50.48	L21B O
ATOM	7398	NE2	GLN	187	75.917	55.547	-5.821	1.00	49.29	L21B N
ATOM	7399	C	GLN	187	81.189	55.667	-5.298	1.00	50.12	L21B C
ATOM	7400	O	GLN	187	81.622	54.956	-4.387	1.00	50.30	L21B O
ATOM	7401	N	TRP	188	81.782	55.767	-6.479	1.00	47.84	L21B N
ATOM	7402	CA	TRP	188	83.108	55.222	-6.694	1.00	47.52	L21B C
ATOM	7403	CB	TRP	188	83.420	55.191	-8.187	1.00	42.90	L21B C
ATOM	7404	CG	TRP	188	84.880	55.086	-8.485	1.00	39.27	L21B C
ATOM	7405	CD2	TRP	188	85.750	53.999	-8.157	1.00	36.97	L21B C
ATOM	7406	CE2	TRP	188	87.038	54.341	-8.621	1.00	35.12	L21B C
ATOM	7407	CE3	TRP	188	85.569	52.774	-7.515	1.00	36.62	L21B C
ATOM	7408	CD1	TRP	188	85.653	56.015	-9.116	1.00	37.57	L21B C
ATOM	7409	NE1	TRP	188	86.950	55.576	-9.203	1.00	35.22	L21B N
ATOM	7410	CZ2	TRP	188	88.141	53.496	-8.467	1.00	35.08	L21B C
ATOM	7411	CZ3	TRP	188	86.676	51.931	-7.360	1.00	37.18	L21B C
ATOM	7412	CH2	TRP	188	87.940	52.298	-7.834	1.00	35.01	L21B C
ATOM	7413	C	TRP	188	84.135	56.094	-5.962	1.00	50.19	L21B C
ATOM	7414	O	TRP	188	85.096	55.589	-5.366	1.00	51.20	L21B O
ATOM	7415	N	LYS	189	83.926	57.405	-6.004	1.00	50.84	L21B N
ATOM	7416	CA	LYS	189	84.898	58.326	-5.442	1.00	52.62	L21B C
ATOM	7417	CB	LYS	189	84.673	59.745	-5.974	1.00	53.78	L21B C
ATOM	7418	CG	LYS	189	85.073	59.957	-7.425	1.00	58.09	L21B C
ATOM	7419	CD	LYS	189	86.572	59.787	-7.626	1.00	61.78	L21B C
ATOM	7420	CE	LYS	189	86.927	59.741	-9.099	1.00	65.61	L21B C
ATOM	7421	NZ	LYS	189	88.402	59.624	-9.287	1.00	73.62	L21B N
ATOM	7422	C	LYS	189	84.818	58.339	-3.927	1.00	52.30	L21B C
ATOM	7423	O	LYS	189	85.780	58.698	-3.246	1.00	54.71	L21B O
ATOM	7424	N	SER	190	83.671	57.949	-3.393	1.00	49.80	L21B N
ATOM	7425	CA	SER	190	83.425	58.174	-1.984	1.00	47.44	L21B C
ATOM	7426	CB	SER	190	82.007	58.680	-1.772	1.00	45.86	L21B C
ATOM	7427	OG	SER	190	81.100	57.847	-2.455	1.00	46.05	L21B O
ATOM	7428	C	SER	190	83.658	56.935	-1.150	1.00	46.24	L21B C
ATOM	7429	O	SER	190	83.083	56.786	-0.081	1.00	46.23	L21B O
ATOM	7430	N	HIS	191	84.513	56.048	-1.633	1.00	45.30	L21B N
ATOM	7431	CA	HIS	191	85.104	55.051	-0.762	1.00	45.91	L21B C
ATOM	7432	CB	HIS	191	84.467	53.687	-1.037	1.00	44.94	L21B C
ATOM	7433	CG	HIS	191	83.037	53.602	-0.602	1.00	44.01	L21B C
ATOM	7434	CD2	HIS	191	81.888	53.929	-1.241	1.00	42.43	L21B C
ATOM	7435	ND1	HIS	191	82.669	53.191	0.661	1.00	44.59	L21B N
ATOM	7436	CE1	HIS	191	81.356	53.270	0.782	1.00	42.41	L21B C
ATOM	7437	NE2	HIS	191	80.859	53.716	-0.357	1.00	40.13	L21B N
ATOM	7438	C	HIS	191	86.623	54.994	-0.926	1.00	46.85	L21B C
ATOM	7439	O	HIS	191	87.143	55.172	-2.019	1.00	47.33	L21B O
ATOM	7440	N	ARG	192	87.334	54.762	0.170	1.00	47.92	L21B N
ATOM	7441	CA	ARG	192	88.779	54.561	0.102	1.00	49.29	L21B C
ATOM	7442	CB	ARG	192	89.364	54.317	1.496	1.00	53.95	L21B C
ATOM	7443	CG	ARG	192	89.706	55.585	2.258	1.00	62.03	L21B C
ATOM	7444	CD	ARG	192	91.080	56.101	1.869	1.00	68.57	L21B C
ATOM	7445	NE	ARG	192	91.236	57.520	2.178	1.00	76.88	L21B N
ATOM	7446	CZ	ARG	192	92.376	58.194	2.059	1.00	80.97	L21B C

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ATOM   7447  NH1 ARG   192      92.421  59.489   2.363  1.00 83.55      L21B N
ATOM   7448  NH2 ARG   192      93.474  57.574   1.640  1.00 83.12      L21B N
ATOM   7449  C   ARG   192      89.156  53.397  -0.800  1.00 46.81      L21B C
ATOM   7450  O   ARG   192      90.292  53.325  -1.266  1.00 47.72      L21B O
ATOM   7451  N   SER   193      88.222  52.481  -1.037  1.00 42.98      L21B N
ATOM   7452  CA  SER   193      88.496  51.342  -1.907  1.00 41.55      L21B C
ATOM   7453  CB  SER   193      89.566  50.434  -1.287  1.00 39.74      L21B C
ATOM   7454  OG  SER   193      89.199  50.021   0.018  1.00 40.91      L21B O
ATOM   7455  C   SER   193      87.243  50.526  -2.198  1.00 40.51      L21B C
ATOM   7456  O   SER   193      86.157  50.890  -1.774  1.00 40.73      L21B O
ATOM   7457  N   TYR   194      87.427  49.433  -2.938  1.00 38.90      L21B N
ATOM   7458  CA  TYR   194      86.377  48.500  -3.338  1.00 35.74      L21B C
ATOM   7459  CB  TYR   194      85.754  48.931  -4.667  1.00 32.23      L21B C
ATOM   7460  CG  TYR   194      84.533  49.816  -4.524  1.00 31.63      L21B C
ATOM   7461  CD1 TYR   194      83.254  49.267  -4.528  1.00 28.78      L21B C
ATOM   7462  CE1 TYR   194      82.127  50.060  -4.415  1.00 29.78      L21B C
ATOM   7463  CD2 TYR   194      84.656  51.202  -4.397  1.00 31.17      L21B C
ATOM   7464  CE2 TYR   194      83.526  52.017  -4.283  1.00 32.51      L21B C
ATOM   7465  CZ  TYR   194      82.259  51.433  -4.297  1.00 33.20      L21B C
ATOM   7466  OH  TYR   194      81.124  52.220  -4.238  1.00 34.06      L21B O
ATOM   7467  C   TYR   194      87.121  47.190  -3.531  1.00 36.59      L21B C
ATOM   7468  O   TYR   194      88.316  47.207  -3.855  1.00 35.94      L21B O
ATOM   7469  N   SER   195      86.457  46.052  -3.339  1.00 36.59      L21B N
ATOM   7470  CA  SER   195      87.182  44.785  -3.492  1.00 37.13      L21B C
ATOM   7471  CB  SER   195      87.685  44.281  -2.135  1.00 36.06      L21B C
ATOM   7472  OG  SER   195      88.132  45.339  -1.307  1.00 34.68      L21B O
ATOM   7473  C   SER   195      86.384  43.674  -4.162  1.00 37.41      L21B C
ATOM   7474  O   SER   195      85.171  43.554  -3.986  1.00 37.59      L21B O
ATOM   7475  N   CYS   196      87.077  42.853  -4.933  1.00 37.65      L21B N
ATOM   7476  CA  CYS   196      86.443  41.701  -5.528  1.00 38.71      L21B C
ATOM   7477  C   CYS   196      86.891  40.511  -4.690  1.00 39.42      L21B C
ATOM   7478  O   CYS   196      88.093  40.277  -4.532  1.00 40.53      L21B O
ATOM   7479  CB  CYS   196      86.881  41.552  -6.997  1.00 38.27      L21B C
ATOM   7480  SG  CYS   196      85.991  40.237  -7.892  1.00 40.80      L21B S
ATOM   7481  N   GLN   197      85.932  39.779  -4.122  1.00 39.35      L21B N
ATOM   7482  CA  GLN   197      86.259  38.614  -3.303  1.00 38.91      L21B C
ATOM   7483  CB  GLN   197      85.733  38.794  -1.876  1.00 38.51      L21B C
ATOM   7484  CG  GLN   197      86.541  39.823  -1.078  1.00 42.70      L21B C
ATOM   7485  CD  GLN   197      85.947  40.191   0.280  1.00 45.03      L21B C
ATOM   7486  OE1 GLN   197      84.738  40.429   0.416  1.00 47.31      L21B O
ATOM   7487  NE2 GLN   197      86.806  40.251   1.296  1.00 44.75      L21B N
ATOM   7488  C   GLN   197      85.688  37.361  -3.924  1.00 38.57      L21B C
ATOM   7489  O   GLN   197      84.475  37.185  -3.966  1.00 41.15      L21B O
ATOM   7490  N   VAL   198      86.565  36.493  -4.411  1.00 37.99      L21B N
ATOM   7491  CA  VAL   198      86.148  35.335  -5.186  1.00 39.54      L21B C
ATOM   7492  CB  VAL   198      86.892  35.280  -6.527  1.00 36.74      L21B C
ATOM   7493  CG1 VAL   198      86.339  34.164  -7.404  1.00 36.03      L21B C
ATOM   7494  CG2 VAL   198      86.769  36.607  -7.219  1.00 37.28      L21B C
ATOM   7495  C   VAL   198      86.432  34.048  -4.434  1.00 41.58      L21B C
ATOM   7496  O   VAL   198      87.563  33.563  -4.429  1.00 43.11      L21B O
ATOM   7497  N   THR   199      85.411  33.488  -3.798  1.00 43.26      L21B N
ATOM   7498  CA  THR   199      85.579  32.201  -3.133  1.00 45.16      L21B C
ATOM   7499  CB  THR   199      84.428  31.889  -2.144  1.00 43.09      L21B C
ATOM   7500  OG1 THR   199      84.438  32.838  -1.072  1.00 42.60      L21B O
ATOM   7501  CG2 THR   199      84.586  30.490  -1.569  1.00 41.46      L21B C
ATOM   7502  C   THR   199      85.602  31.108  -4.175  1.00 45.66      L21B C
ATOM   7503  O   THR   199      84.915  31.190  -5.184  1.00 47.58      L21B O
ATOM   7504  N   HIS   200      86.395  30.081  -3.921  1.00 47.28      L21B N
ATOM   7505  CA  HIS   200      86.419  28.904  -4.770  1.00 49.91      L21B C
ATOM   7506  CB  HIS   200      87.472  29.077  -5.864  1.00 47.40      L21B C
ATOM   7507  CG  HIS   200      87.659  27.864  -6.713  1.00 44.66      L21B C
ATOM   7508  CD2 HIS   200      86.973  27.417  -7.791  1.00 43.66      L21B C
ATOM   7509  ND1 HIS   200      88.656  26.941  -6.479  1.00 43.35      L21B N
ATOM   7510  CE1 HIS   200      88.573  25.978  -7.379  1.00 44.39      L21B C
ATOM   7511  NE2 HIS   200      87.560  26.242  -8.186  1.00 43.71      L21B N
ATOM   7512  C   HIS   200      86.768  27.716  -3.892  1.00 52.57      L21B C
ATOM   7513  O   HIS   200      87.756  27.768  -3.170  1.00 52.42      L21B O
ATOM   7514  N   GLU   201      85.961  26.658  -3.942  1.00 57.26      L21B N
ATOM   7515  CA  GLU   201      86.200  25.483  -3.098  1.00 63.32      L21B C
ATOM   7516  CB  GLU   201      87.180  24.515  -3.776  1.00 66.42      L21B C
ATOM   7517  CG  GLU   201      86.891  24.244  -5.239  1.00 75.18      L21B C
ATOM   7518  CD  GLU   201      85.769  23.242  -5.448  1.00 79.87      L21B C
ATOM   7519  OE1 GLU   201      84.840  23.536  -6.242  1.00 82.95      L21B O
ATOM   7520  OE2 GLU   201      85.820  22.163  -4.818  1.00 82.36      L21B O
ATOM   7521  C   GLU   201      86.793  25.904  -1.755  1.00 64.56      L21B C
ATOM   7522  O   GLU   201      87.925  25.538  -1.431  1.00 64.47      L21B O
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ATOM	7523	N	GLY	201	86.046	26.689	-0.988	1.00	66.07	L21B N
ATOM	7524	CA	GLY	201	86.506	27.076	0.333	1.00	67.95	L21B C
ATOM	7525	C	GLY	201	87.527	28.201	0.360	1.00	70.16	L21B C
ATOM	7526	O	GLY	201	87.648	28.895	1.373	1.00	71.89	L21B O
ATOM	7527	N	SER	203	88.249	28.394	-0.745	1.00	70.44	L21B N
ATOM	7528	CA	SER	203	89.361	29.358	-0.812	1.00	69.03	L21B C
ATOM	7529	CB	SER	203	90.540	28.731	-1.571	1.00	69.91	L21B C
ATOM	7530	OG	SER	203	90.239	28.519	-2.948	1.00	70.63	L21B O
ATOM	7531	C	SER	203	89.020	30.723	-1.450	1.00	66.90	L21B C
ATOM	7532	O	SER	203	88.819	30.816	-2.661	1.00	66.99	L21B O
ATOM	7533	N	THR	204	88.999	31.779	-0.636	1.00	64.21	L21B N
ATOM	7534	CA	THR	204	88.670	33.136	-1.108	1.00	61.96	L21B C
ATOM	7535	CB	THR	204	87.967	33.949	0.016	1.00	62.44	L21B C
ATOM	7536	OG1	THR	204	86.801	33.248	0.457	1.00	61.41	L21B O
ATOM	7537	CG2	THR	204	87.560	35.324	-0.484	1.00	63.92	L21B C
ATOM	7538	C	THR	204	89.890	33.951	-1.604	1.00	59.78	L21B C
ATOM	7539	O	THR	204	90.821	34.226	-0.847	1.00	57.60	L21B O
ATOM	7540	N	VAL	205	89.874	34.348	-2.874	1.00	57.57	L21B N
ATOM	7541	CA	VAL	205	90.932	35.201	-3.410	1.00	56.13	L21B C
ATOM	7542	CB	VAL	205	91.390	34.727	-4.797	1.00	55.74	L21B C
ATOM	7543	CG1	VAL	205	92.575	35.542	-5.245	1.00	55.66	L21B C
ATOM	7544	CG2	VAL	205	91.724	33.264	-4.768	1.00	56.05	L21B C
ATOM	7545	C	VAL	205	90.420	36.631	-3.555	1.00	55.70	L21B C
ATOM	7546	O	VAL	205	89.401	36.867	-4.202	1.00	57.15	L21B O
ATOM	7547	N	GLU	206	91.139	37.584	-2.973	1.00	53.18	L21B N
ATOM	7548	CA	GLU	206	90.673	38.965	-2.912	1.00	50.02	L21B C
ATOM	7549	CB	GLU	206	90.657	39.419	-1.459	1.00	50.29	L21B C
ATOM	7550	CG	GLU	206	90.759	40.913	-1.272	1.00	51.53	L21B C
ATOM	7551	CD	GLU	206	90.102	41.358	0.009	1.00	52.70	L21B C
ATOM	7552	OE1	GLU	206	89.339	40.550	0.577	1.00	54.78	L21B O
ATOM	7553	OE2	GLU	206	90.339	42.503	0.447	1.00	54.12	L21B O
ATOM	7554	C	GLU	206	91.495	39.950	-3.743	1.00	48.36	L21B C
ATOM	7555	O	GLU	206	92.713	39.824	-3.853	1.00	49.43	L21B O
ATOM	7556	N	LYS	207	90.826	40.938	-4.325	1.00	46.01	L21B N
ATOM	7557	CA	LYS	207	91.519	42.007	-5.033	1.00	43.18	L21B C
ATOM	7558	CB	LYS	207	91.554	41.729	-6.529	1.00	40.80	L21B C
ATOM	7559	CG	LYS	207	92.938	41.528	-7.081	1.00	37.52	L21B C
ATOM	7560	CD	LYS	207	93.639	40.392	-6.382	1.00	39.09	L21B C
ATOM	7561	CE	LYS	207	95.108	40.317	-6.775	1.00	39.83	L21B C
ATOM	7562	NZ	LYS	207	95.307	40.319	-8.260	1.00	39.68	L21B N
ATOM	7563	C	LYS	207	90.827	43.329	-4.782	1.00	43.89	L21B C
ATOM	7564	O	LYS	207	89.633	43.372	-4.487	1.00	45.18	L21B O
ATOM	7565	N	THR	208	91.584	44.411	-4.890	1.00	43.72	L21B N
ATOM	7566	CA	THR	208	91.081	45.721	-4.527	1.00	43.45	L21B C
ATOM	7567	CB	THR	208	91.437	46.051	-3.071	1.00	43.01	L21B C
ATOM	7568	OG1	THR	208	90.722	45.168	-2.199	1.00	43.45	L21B O
ATOM	7569	CG2	THR	208	91.091	47.494	-2.737	1.00	43.14	L21B C
ATOM	7570	C	THR	208	91.655	46.795	-5.437	1.00	45.05	L21B C
ATOM	7571	O	THR	208	92.786	46.690	-5.903	1.00	43.07	L21B O
ATOM	7572	N	VAL	209	90.850	47.820	-5.696	1.00	47.06	L21B N
ATOM	7573	CA	VAL	209	91.288	48.975	-6.448	1.00	49.42	L21B C
ATOM	7574	CB	VAL	209	90.703	48.950	-7.853	1.00	50.14	L21B C
ATOM	7575	CG1	VAL	209	91.166	47.695	-8.573	1.00	47.79	L21B C
ATOM	7576	CG2	VAL	209	89.182	49.003	-7.779	1.00	51.93	L21B C
ATOM	7577	C	VAL	209	90.794	50.208	-5.719	1.00	52.56	L21B C
ATOM	7578	O	VAL	209	89.876	50.120	-4.906	1.00	51.78	L21B O
ATOM	7579	N	ALA	210	91.411	51.354	-5.997	1.00	57.14	L21B N
ATOM	7580	CA	ALA	210	91.030	52.611	-5.343	1.00	60.45	L21B C
ATOM	7581	CB	ALA	210	92.036	52.962	-4.256	1.00	57.24	L21B C
ATOM	7582	C	ALA	210	90.918	53.763	-6.331	1.00	64.66	L21B C
ATOM	7583	O	ALA	210	91.609	53.801	-7.352	1.00	61.92	L21B O
ATOM	7584	N	PRO	211	90.039	54.726	-6.033	1.00	70.80	L21B N
ATOM	7585	CD	PRO	211	89.146	54.779	-4.868	1.00	73.04	L21B C
ATOM	7586	CA	PRO	211	89.878	55.890	-6.898	1.00	76.06	L21B C
ATOM	7587	CB	PRO	211	88.663	56.608	-6.316	1.00	75.09	L21B C
ATOM	7588	CG	PRO	211	88.606	56.179	-4.918	1.00	75.55	L21B C
ATOM	7589	C	PRO	211	91.139	56.737	-6.872	1.00	80.46	L21B C
ATOM	7590	O	PRO	211	91.237	57.751	-7.560	1.00	79.95	L21B O
ATOM	7591	N	THR	212	92.110	56.302	-6.078	1.00	85.46	L21B N
ATOM	7592	CA	THR	212	93.399	56.973	-6.031	1.00	91.28	L21B C
ATOM	7593	CB	THR	212	94.165	56.604	-4.734	1.00	93.31	L21B C
ATOM	7594	OG1	THR	212	93.322	56.861	-3.602	1.00	94.30	L21B O
ATOM	7595	CG2	THR	212	95.445	57.441	-4.596	1.00	94.22	L21B C
ATOM	7596	C	THR	212	94.220	56.575	-7.260	1.00	92.75	L21B C
ATOM	7597	O	THR	212	95.341	56.047	-7.083	1.00	96.55	L21B O
ATOM	7598	OXT	THR	212	93.725	56.799	-8.390	1.00	95.26	L21B O

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TER    7599      THR   212                                                      L21B
ATOM   7600  CB  GLU     1      55.064   6.583 -21.347  1.00 73.12      H21B C
ATOM   7601  CG  GLU     1      55.535   7.444 -22.516  1.00 78.67      H21B C
ATOM   7602  CD  GLU     1      56.988   7.870 -22.365  1.00 81.81      H21B C
ATOM   7603  OE1 GLU     1      57.708   7.220 -21.575  1.00 83.96      H21B O
ATOM   7604  OE2 GLU     1      57.407   8.852 -23.024  1.00 83.08      H21B O
ATOM   7605  C   GLU     1      53.453   8.324 -20.546  1.00 66.92      H21B C
ATOM   7606  O   GLU     1      53.014   9.132 -21.373  1.00 64.83      H21B O
ATOM   7607  N   GLU     1      52.655   6.390 -21.940  1.00 69.73      H21B N
ATOM   7608  CA  GLU     1      53.623   6.841 -20.892  1.00 69.78      H21B C
ATOM   7609  N   VAL     2      53.807   8.669 -19.313  1.00 63.58      H21B N
ATOM   7610  CA  VAL     2      53.524   9.995 -18.788  1.00 61.52      H21B C
ATOM   7611  CB  VAL     2      53.746  10.065 -17.280  1.00 63.16      H21B C
ATOM   7612  CG1 VAL     2      53.593  11.493 -16.815  1.00 63.16      H21B C
ATOM   7613  CG2 VAL     2      52.763   9.151 -16.571  1.00 63.55      H21B C
ATOM   7614  C   VAL     2      54.417  11.027 -19.429  1.00 59.20      H21B C
ATOM   7615  O   VAL     2      55.621  10.999 -19.259  1.00 57.87      H21B O
ATOM   7616  N   GLN     3      53.806  11.958 -20.142  1.00 58.46      H21B N
ATOM   7617  CA  GLN     3      54.511  12.768 -21.111  1.00 57.91      H21B C
ATOM   7618  CB  GLN     3      54.405  12.090 -22.477  1.00 59.52      H21B C
ATOM   7619  CG  GLN     3      55.250  12.691 -23.581  1.00 64.49      H21B C
ATOM   7620  CD  GLN     3      55.179  11.867 -24.857  1.00 66.57      H21B C
ATOM   7621  OE1 GLN     3      55.033  12.406 -25.963  1.00 67.65      H21B O
ATOM   7622  NE2 GLN     3      55.277  10.548 -24.709  1.00 66.83      H21B N
ATOM   7623  C   GLN     3      53.894  14.164 -21.146  1.00 57.21      H21B C
ATOM   7624  O   GLN     3      52.762  14.345 -21.599  1.00 57.22      H21B O
ATOM   7625  N   LEU     4      54.644  15.147 -20.659  1.00 55.99      H21B N
ATOM   7626  CA  LEU     4      54.177  16.523 -20.595  1.00 54.53      H21B C
ATOM   7627  CB  LEU     4      54.485  17.099 -19.224  1.00 52.38      H21B C
ATOM   7628  CG  LEU     4      53.635  16.536 -18.091  1.00 50.58      H21B C
ATOM   7629  CD1 LEU     4      54.188  16.982 -16.749  1.00 49.08      H21B C
ATOM   7630  CD2 LEU     4      52.213  17.010 -18.278  1.00 51.49      H21B C
ATOM   7631  C   LEU     4      54.858  17.359 -21.661  1.00 55.60      H21B C
ATOM   7632  O   LEU     4      56.076  17.299 -21.806  1.00 56.73      H21B O
ATOM   7633  N   VAL     5      54.075  18.141 -22.401  1.00 56.76      H21B N
ATOM   7634  CA  VAL     5      54.585  18.838 -23.582  1.00 59.30      H21B C
ATOM   7635  CB  VAL     5      54.087  18.158 -24.883  1.00 57.84      H21B C
ATOM   7636  CG1 VAL     5      54.545  18.953 -26.102  1.00 57.36      H21B C
ATOM   7637  CG2 VAL     5      54.604  16.735 -24.959  1.00 54.25      H21B C
ATOM   7638  C   VAL     5      54.212  20.323 -23.642  1.00 62.11      H21B C
ATOM   7639  O   VAL     5      53.066  20.677 -23.925  1.00 60.98      H21B O
ATOM   7640  N   GLN     6      55.193  21.189 -23.406  1.00 66.23      H21B N
ATOM   7641  CA  GLN     6      54.936  22.619 -23.271  1.00 72.12      H21B C
ATOM   7642  CB  GLN     6      55.978  23.242 -22.340  1.00 71.68      H21B C
ATOM   7643  CG  GLN     6      56.117  22.517 -21.013  1.00 74.65      H21B C
ATOM   7644  CD  GLN     6      57.118  23.171 -20.085  1.00 76.41      H21B C
ATOM   7645  OE1 GLN     6      57.615  22.547 -19.148  1.00 76.12      H21B O
ATOM   7646  NE2 GLN     6      57.419  24.434 -20.342  1.00 83.40      H21B N
ATOM   7647  C   GLN     6      54.900  23.380 -24.600  1.00 75.46      H21B C
ATOM   7648  O   GLN     6      55.484  22.953 -25.593  1.00 76.72      H21B O
ATOM   7649  N   SER     7      54.205  24.514 -24.603  1.00 79.41      H21B N
ATOM   7650  CA  SER     7      54.059  25.333 -25.795  1.00 81.97      H21B C
ATOM   7651  CB  SER     7      53.273  26.603 -25.468  1.00 81.36      H21B C
ATOM   7652  OG  SER     7      53.846  27.308 -24.380  1.00 76.16      H21B O
ATOM   7653  C   SER     7      55.413  25.709 -26.365  1.00 85.28      H21B C
ATOM   7654  O   SER     7      56.456  25.356 -25.817  1.00 86.88      H21B O
ATOM   7655  N   GLY     8      55.390  26.435 -27.472  1.00 88.03      H21B N
ATOM   7656  CA  GLY     8      56.628  26.845 -28.098  1.00 91.52      H21B C
ATOM   7657  C   GLY     8      57.347  27.965 -27.373  1.00 93.23      H21B C
ATOM   7658  O   GLY     8      56.899  28.455 -26.338  1.00 91.33      H21B O
ATOM   7659  N   ALA     9      58.481  28.371 -27.925  1.00 97.66      H21B N
ATOM   7660  CA  ALA     9      59.244  29.459 -27.350  1.00101.03      H21B C
ATOM   7661  CB  ALA     9      60.687  29.377 -27.793  1.00105.95      H21B C
ATOM   7662  C   ALA     9      58.633  30.774 -27.791  1.00101.99      H21B C
ATOM   7663  O   ALA     9      58.185  30.914 -28.930  1.00101.78      H21B O
ATOM   7664  N   GLU    10      58.612  31.734 -26.874  1.00101.94      H21B N
ATOM   7665  CA  GLU    10      57.969  33.011 -27.124  1.00102.88      H21B C
ATOM   7666  CB  GLU    10      56.567  33.016 -26.505  1.00106.55      H21B C
ATOM   7667  CG  GLU    10      55.579  32.157 -27.275  1.00112.96      H21B C
ATOM   7668  CD  GLU    10      54.401  31.728 -26.439  1.00116.32      H21B C
ATOM   7669  OE1 GLU    10      54.359  32.110 -25.253  1.00119.31      H21B O
ATOM   7670  OE2 GLU    10      53.522  31.011 -26.963  1.00119.07      H21B O
ATOM   7671  C   GLU    10      58.779  34.190 -26.607  1.00100.78      H21B C
ATOM   7672  O   GLU    10      59.532  34.061 -25.637  1.00 99.72      H21B O
ATOM   7673  N   VAL    11      58.614  35.335 -27.274  1.00 97.98      H21B N
ATOM   7674  CA  VAL    11      59.360  36.559 -26.964  1.00 94.70      H21B C
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ATOM   7675  CB  VAL    11      60.409  36.848 -28.061  1.00 94.26      H21B C
ATOM   7676  CG1 VAL    11      61.190  38.097 -27.722  1.00 94.82      H21B C
ATOM   7677  CG2 VAL    11      61.355  35.668 -28.192  1.00 93.77      H21B C
ATOM   7678  C   VAL    11      58.456  37.797 -26.799  1.00 90.98      H21B C
ATOM   7679  O   VAL    11      57.662  38.115 -27.678  1.00 90.99      H21B O
ATOM   7680  N   LYS    12      58.596  38.492 -25.669  1.00 86.92      H21B N
ATOM   7681  CA  LYS    12      57.657  39.540 -25.256  1.00 82.85      H21B C
ATOM   7682  CB  LYS    12      56.660  38.978 -24.225  1.00 83.38      H21B C
ATOM   7683  CG  LYS    12      55.735  37.868 -24.752  1.00 83.33      H21B C
ATOM   7684  CD  LYS    12      54.466  38.433 -25.388  1.00 84.59      H21B C
ATOM   7685  CE  LYS    12      53.732  37.413 -26.250  1.00 85.71      H21B C
ATOM   7686  NZ  LYS    12      52.793  38.089 -27.202  1.00 88.33      H21B N
ATOM   7687  C   LYS    12      58.358  40.772 -24.668  1.00 79.74      H21B C
ATOM   7688  O   LYS    12      59.426  40.666 -24.070  1.00 79.34      H21B O
ATOM   7689  N   LYS    13      57.744  41.939 -24.850  1.00 76.15      H21B N
ATOM   7690  CA  LYS    13      58.303  43.198 -24.367  1.00 73.12      H21B C
ATOM   7691  CB  LYS    13      57.899  44.356 -25.282  1.00 72.80      H21B C
ATOM   7692  CG  LYS    13      58.547  44.332 -26.644  1.00 72.33      H21B C
ATOM   7693  CD  LYS    13      58.100  45.521 -27.465  0.50 75.00      H21B C
ATOM   7694  CE  LYS    13      58.853  45.603 -28.778  1.00 76.22      H21B C
ATOM   7695  NZ  LYS    13      58.325  46.709 -29.614  1.00 79.14      H21B N
ATOM   7696  C   LYS    13      57.778  43.466 -22.975  1.00 69.85      H21B C
ATOM   7697  O   LYS    13      56.745  42.947 -22.589  1.00 70.18      H21B O
ATOM   7698  N   PRO    14      58.480  44.295 -22.201  1.00 66.74      H21B N
ATOM   7699  CD  PRO    14      59.782  44.935 -22.443  1.00 64.63      H21B C
ATOM   7700  CA  PRO    14      57.962  44.600 -20.867  1.00 65.80      H21B C
ATOM   7701  CB  PRO    14      58.893  45.707 -20.372  1.00 63.65      H21B C
ATOM   7702  CG  PRO    14      60.177  45.416 -21.067  1.00 63.20      H21B C
ATOM   7703  C   PRO    14      56.506  45.031 -20.935  1.00 64.83      H21B C
ATOM   7704  O   PRO    14      56.044  45.494 -21.975  1.00 65.82      H21B O
ATOM   7705  N   GLY    15      55.781  44.850 -19.836  1.00 63.25      H21B N
ATOM   7706  CA  GLY    15      54.388  45.265 -19.789  1.00 60.95      H21B C
ATOM   7707  C   GLY    15      53.404  44.306 -20.443  1.00 60.18      H21B C
ATOM   7708  O   GLY    15      52.208  44.384 -20.176  1.00 60.15      H21B O
ATOM   7709  N   ALA    16      53.892  43.402 -21.293  1.00 58.86      H21B N
ATOM   7710  CA  ALA    16      53.016  42.476 -22.013  1.00 57.51      H21B C
ATOM   7711  CB  ALA    16      53.634  42.097 -23.352  1.00 56.81      H21B C
ATOM   7712  C   ALA    16      52.686  41.203 -21.234  1.00 56.45      H21B C
ATOM   7713  O   ALA    16      52.973  41.096 -20.034  1.00 54.45      H21B O
ATOM   7714  N   SER    17      52.079  40.246 -21.944  1.00 55.06      H21B N
ATOM   7715  CA  SER    17      51.619  38.989 -21.355  1.00 54.13      H21B C
ATOM   7716  CB  SER    17      50.116  39.050 -21.119  1.00 52.63      H21B C
ATOM   7717  OG  SER    17      49.819  40.066 -20.184  1.00 52.89      H21B O
ATOM   7718  C   SER    17      51.942  37.752 -22.186  1.00 54.17      H21B C
ATOM   7719  O   SER    17      51.745  37.745 -23.401  1.00 54.06      H21B O
ATOM   7720  N   VAL    18      52.440  36.709 -21.522  1.00 54.75      H21B N
ATOM   7721  CA  VAL    18      52.538  35.380 -22.122  1.00 55.21      H21B C
ATOM   7722  CB  VAL    18      53.959  34.781 -22.042  1.00 54.56      H21B C
ATOM   7723  CG1 VAL    18      54.718  35.067 -23.313  1.00 55.71      H21B C
ATOM   7724  CG2 VAL    18      54.693  35.337 -20.836  1.00 53.13      H21B C
ATOM   7725  C   VAL    18      51.615  34.373 -21.477  1.00 54.61      H21B C
ATOM   7726  O   VAL    18      51.310  34.455 -20.288  1.00 52.93      H21B O
ATOM   7727  N   LYS    19      51.190  33.416 -22.292  1.00 55.58      H21B N
ATOM   7728  CA  LYS    19      50.429  32.270 -21.834  1.00 56.30      H21B C
ATOM   7729  CB  LYS    19      48.989  32.340 -22.368  1.00 57.21      H21B C
ATOM   7730  CG  LYS    19      48.025  31.342 -21.704  1.00 59.70      H21B C
ATOM   7731  CD  LYS    19      46.632  31.357 -22.314  1.00 64.05      H21B C
ATOM   7732  CE  LYS    19      45.643  30.623 -21.438  1.00 67.96      H21B C
ATOM   7733  NZ  LYS    19      44.243  30.905 -21.843  1.00 77.89      H21B N
ATOM   7734  C   LYS    19      51.130  31.015 -22.354  1.00 55.43      H21B C
ATOM   7735  O   LYS    19      51.354  30.885 -23.555  1.00 56.86      H21B O
ATOM   7736  N   VAL    20      51.471  30.107 -21.439  1.00 53.48      H21B N
ATOM   7737  CA  VAL    20      52.219  28.892 -21.745  1.00 51.91      H21B C
ATOM   7738  CB  VAL    20      53.465  28.788 -20.822  1.00 52.28      H21B C
ATOM   7739  CG1 VAL    20      54.133  27.415 -20.967  1.00 51.32      H21B C
ATOM   7740  CG2 VAL    20      54.454  29.897 -21.164  1.00 49.80      H21B C
ATOM   7741  C   VAL    20      51.361  27.633 -21.571  1.00 51.11      H21B C
ATOM   7742  O   VAL    20      50.687  27.479 -20.554  1.00 50.92      H21B O
ATOM   7743  N   SER    21      51.405  26.736 -22.557  1.00 49.84      H21B N
ATOM   7744  CA  SER    21      50.636  25.490 -22.538  1.00 49.48      H21B C
ATOM   7745  CB  SER    21      50.209  25.094 -23.954  1.00 47.62      H21B C
ATOM   7746  OG  SER    21      49.534  26.136 -24.630  1.00 45.69      H21B O
ATOM   7747  C   SER    21      51.426  24.323 -21.961  1.00 51.01      H21B C
ATOM   7748  O   SER    21      52.644  24.292 -22.061  1.00 53.07      H21B O
ATOM   7749  N   CYS    22      50.714  23.354 -21.388  1.00 52.61      H21B N
ATOM   7750  CA  CYS    22      51.288  22.089 -20.914  1.00 53.01      H21B C
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ATOM   7751  C   CYS  22      50.295  20.978 -21.235  1.00 54.06      H21B C
ATOM   7752  O   CYS  22      49.179  20.977 -20.726  1.00 53.18      H21B O
ATOM   7753  CB  CYS  22      51.486  22.139 -19.402  1.00 52.59      H21B C
ATOM   7754  SG  CYS  22      52.311  20.704 -18.625  1.00 50.07      H21B S
ATOM   7755  N   LYS  23      50.689  20.031 -22.069  1.00 56.00      H21B N
ATOM   7756  CA  LYS  23      49.755  19.003 -22.496  1.00 58.44      H21B C
ATOM   7757  CB  LYS  23      49.727  18.903 -24.020  1.00 59.90      H21B C
ATOM   7758  CG  LYS  23      48.465  19.442 -24.661  1.00 63.71      H21B C
ATOM   7759  CD  LYS  23      47.553  18.301 -25.077  1.00 71.14      H21B C
ATOM   7760  CE  LYS  23      48.115  17.544 -26.270  1.00 75.82      H21B C
ATOM   7761  NZ  LYS  23      47.296  16.349 -26.613  1.00 81.04      H21B N
ATOM   7762  C   LYS  23      50.155  17.674 -21.911  1.00 58.80      H21B C
ATOM   7763  O   LYS  23      51.310  17.284 -22.004  1.00 59.77      H21B O
ATOM   7764  N   ALA  24      49.194  16.979 -21.312  1.00 59.37      H21B N
ATOM   7765  CA  ALA  24      49.479  15.720 -20.637  1.00 60.19      H21B C
ATOM   7766  CB  ALA  24      48.990  15.780 -19.204  1.00 61.61      H21B C
ATOM   7767  C   ALA  24      48.871  14.510 -21.342  1.00 60.44      H21B C
ATOM   7768  O   ALA  24      47.842  14.600 -22.013  1.00 61.03      H21B O
ATOM   7769  N   SER  25      49.523  13.370 -21.180  1.00 59.33      H21B N
ATOM   7770  CA  SER  25      49.035  12.142 -21.759  1.00 57.93      H21B C
ATOM   7771  CB  SER  25      49.605  11.971 -23.154  1.00 56.24      H21B C
ATOM   7772  OG  SER  25      50.986  11.688 -23.076  1.00 52.37      H21B O
ATOM   7773  C   SER  25      49.511  11.003 -20.879  1.00 59.09      H21B C
ATOM   7774  O   SER  25      50.546  11.117 -20.221  1.00 60.76      H21B O
ATOM   7775  N   GLY  26      48.754   9.910 -20.862  1.00 57.10      H21B N
ATOM   7776  CA  GLY  26      49.281   8.663 -20.341  1.00 54.77      H21B C
ATOM   7777  C   GLY  26      49.093   8.453 -18.853  1.00 52.65      H21B C
ATOM   7778  O   GLY  26      49.749   7.593 -18.240  1.00 51.57      H21B O
ATOM   7779  N   TYR  27      48.203   9.244 -18.264  1.00 50.72      H21B N
ATOM   7780  CA  TYR  27      47.809   9.047 -16.883  1.00 49.62      H21B C
ATOM   7781  CB  TYR  27      48.888   9.581 -15.934  1.00 48.68      H21B C
ATOM   7782  CG  TYR  27      48.984  11.088 -15.900  1.00 48.27      H21B C
ATOM   7783  CD1 TYR  27      49.651  11.789 -16.898  1.00 48.25      H21B C
ATOM   7784  CE1 TYR  27      49.720  13.174 -16.875  1.00 47.93      H21B C
ATOM   7785  CD2 TYR  27      48.392  11.813 -14.878  1.00 46.65      H21B C
ATOM   7786  CE2 TYR  27      48.455  13.188 -14.852  1.00 46.51      H21B C
ATOM   7787  CZ  TYR  27      49.118  13.863 -15.850  1.00 46.31      H21B C
ATOM   7788  OH  TYR  27      49.157  15.232 -15.823  1.00 45.63      H21B O
ATOM   7789  C   TYR  27      46.495   9.770 -16.661  1.00 49.46      H21B C
ATOM   7790  O   TYR  27      46.059  10.543 -17.509  1.00 50.28      H21B O
ATOM   7791  N   THR  28      45.865   9.495 -15.523  1.00 49.35      H21B N
ATOM   7792  CA  THR  28      44.567  10.061 -15.186  1.00 47.73      H21B C
ATOM   7793  CB  THR  28      43.865   9.233 -14.114  1.00 47.99      H21B C
ATOM   7794  OG1 THR  28      43.650   7.904 -14.603  1.00 45.83      H21B O
ATOM   7795  CG2 THR  28      42.531   9.866 -13.753  1.00 46.00      H21B C
ATOM   7796  C   THR  28      44.731  11.456 -14.647  1.00 47.40      H21B C
ATOM   7797  O   THR  28      45.152  11.646 -13.509  1.00 46.65      H21B O
ATOM   7798  N   LEU  29      44.369  12.428 -15.470  1.00 48.24      H21B N
ATOM   7799  CA  LEU  29      44.654  13.828 -15.203  1.00 48.79      H21B C
ATOM   7800  CB  LEU  29      44.044  14.687 -16.310  1.00 51.03      H21B C
ATOM   7801  CG  LEU  29      44.477  14.391 -17.750  1.00 51.75      H21B C
ATOM   7802  CD1 LEU  29      43.533  15.076 -18.741  1.00 51.69      H21B C
ATOM   7803  CD2 LEU  29      45.909  14.871 -17.940  1.00 54.49      H21B C
ATOM   7804  C   LEU  29      44.112  14.280 -13.856  1.00 47.85      H21B C
ATOM   7805  O   LEU  29      44.683  15.164 -13.214  1.00 46.44      H21B O
ATOM   7806  N   THR  30      43.004  13.681 -13.435  1.00 48.64      H21B N
ATOM   7807  CA  THR  30      42.347  14.122 -12.219  1.00 50.74      H21B C
ATOM   7808  CB  THR  30      40.859  13.743 -12.211  1.00 49.03      H21B C
ATOM   7809  OG1 THR  30      40.722  12.334 -12.389  1.00 50.94      H21B O
ATOM   7810  CG2 THR  30      40.133  14.451 -13.317  1.00 47.98      H21B C
ATOM   7811  C   THR  30      43.046  13.519 -11.027  1.00 50.98      H21B C
ATOM   7812  O   THR  30      42.609  13.668  -9.889  1.00 50.89      H21B O
ATOM   7813  N   SER  31      44.160  12.854 -11.305  1.00 53.19      H21B N
ATOM   7814  CA  SER  31      44.955  12.233 -10.263  1.00 55.07      H21B C
ATOM   7815  CB  SER  31      45.561  10.934 -10.764  1.00 56.35      H21B C
ATOM   7816  OG  SER  31      44.999   9.858 -10.045  1.00 56.82      H21B O
ATOM   7817  C   SER  31      46.063  13.126  -9.751  1.00 55.17      H21B C
ATOM   7818  O   SER  31      46.625  12.875  -8.692  1.00 53.88      H21B O
ATOM   7819  N   TYR  32      46.375  14.179 -10.493  1.00 55.54      H21B N
ATOM   7820  CA  TYR  32      47.539  14.940 -10.144  1.00 55.48      H21B C
ATOM   7821  CB  TYR  32      48.660  14.586 -11.095  1.00 60.47      H21B C
ATOM   7822  CG  TYR  32      49.372  13.363 -10.654  1.00 64.82      H21B C
ATOM   7823  CD1 TYR  32      49.287  12.192 -11.386  1.00 67.41      H21B C
ATOM   7824  CE1 TYR  32      49.872  11.059 -10.943  1.00 69.47      H21B C
ATOM   7825  CD2 TYR  32      50.075  13.358  -9.465  1.00 66.41      H21B C
ATOM   7826  CE2 TYR  32      50.664  12.236  -9.020  1.00 68.99      H21B C
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ATOM   7827  CZ  TYR    32      50.561  11.082  -9.761  1.00 70.12      H21B C
ATOM   7828  OH  TYR    32      51.172   9.941  -9.328  1.00 72.42      H21B O
ATOM   7829  C   TYR    32      47.440  16.435 -10.011  1.00 53.36      H21B C
ATOM   7830  O   TYR    32      47.609  16.964  -8.907  1.00 53.86      H21B O
ATOM   7831  N   GLY    33      47.201  17.123 -11.123  1.00 50.34      H21B N
ATOM   7832  CA  GLY    33      47.374  18.580 -11.157  1.00 46.78      H21B C
ATOM   7833  C   GLY    33      48.767  19.025 -11.621  1.00 44.17      H21B C
ATOM   7834  O   GLY    33      49.703  18.211 -11.676  1.00 45.33      H21B O
ATOM   7835  N   ILE    34      48.933  20.307 -11.936  1.00 38.23      H21B N
ATOM   7836  CA  ILE    34      50.162  20.762 -12.580  1.00 34.77      H21B C
ATOM   7837  CB  ILE    34      49.857  21.401 -13.943  1.00 32.05      H21B C
ATOM   7838  CG2 ILE    34      51.147  21.870 -14.562  1.00 33.10      H21B C
ATOM   7839  CG1 ILE    34      49.265  20.307 -14.838  1.00 32.22      H21B C
ATOM   7840  CD1 ILE    34      50.188  19.133 -15.056  1.00 32.13      H21B C
ATOM   7841  C   ILE    34      50.946  21.742 -11.623  1.00 32.84      H21B C
ATOM   7842  O   ILE    34      50.397  22.732 -11.165  1.00 32.86      H21B O
ATOM   7843  N   SER    35      52.205  21.486 -11.280  1.00 30.04      H21B N
ATOM   7844  CA  SER    35      53.030  22.582 -10.782  1.00 28.79      H21B C
ATOM   7845  CB  SER    35      54.135  22.083  -9.875  1.00 30.88      H21B C
ATOM   7846  OG  SER    35      53.665  21.644  -8.608  1.00 33.45      H21B O
ATOM   7847  C   SER    35      53.660  23.332 -11.940  1.00 29.43      H21B C
ATOM   7848  O   SER    35      53.982  22.785 -12.991  1.00 27.88      H21B O
ATOM   7849  N   TRP    36      53.810  24.630 -11.739  1.00 32.51      H21B N
ATOM   7850  CA  TRP    36      54.652  25.453 -12.620  1.00 33.33      H21B C
ATOM   7851  CB  TRP    36      53.929  26.727 -13.099  1.00 30.43      H21B C
ATOM   7852  CG  TRP    36      52.810  26.363 -13.964  1.00 27.81      H21B C
ATOM   7853  CD2 TRP    36      52.851  26.161 -15.378  1.00 25.61      H21B C
ATOM   7854  CE2 TRP    36      51.585  25.696 -15.765  1.00 25.73      H21B C
ATOM   7855  CE3 TRP    36      53.836  26.334 -16.346  1.00 24.81      H21B C
ATOM   7856  CD1 TRP    36      51.565  26.032 -13.563  1.00 25.80      H21B C
ATOM   7857  NE1 TRP    36      50.817  25.625 -14.636  1.00 25.45      H21B N
ATOM   7858  CZ2 TRP    36      51.277  25.391 -17.077  1.00 26.10      H21B C
ATOM   7859  CZ3 TRP    36      53.543  26.040 -17.636  1.00 28.16      H21B C
ATOM   7860  CH2 TRP    36      52.266  25.572 -18.002  1.00 31.41      H21B C
ATOM   7861  C   TRP    36      55.935  25.862 -11.890  1.00 34.86      H21B C
ATOM   7862  O   TRP    36      55.868  26.388 -10.769  1.00 34.06      H21B O
ATOM   7863  N   VAL    37      57.085  25.579 -12.510  1.00 35.54      H21B N
ATOM   7864  CA  VAL    37      58.381  26.082 -12.061  1.00 39.02      H21B C
ATOM   7865  CB  VAL    37      59.361  24.915 -11.867  1.00 39.94      H21B C
ATOM   7866  CG1 VAL    37      60.629  25.398 -11.198  1.00 40.01      H21B C
ATOM   7867  CG2 VAL    37      58.711  23.828 -11.077  1.00 41.21      H21B C
ATOM   7868  C   VAL    37      58.958  27.033 -13.111  1.00 40.36      H21B C
ATOM   7869  O   VAL    37      58.892  26.747 -14.306  1.00 38.98      H21B O
ATOM   7870  N   ARG    38      59.511  28.164 -12.674  1.00 42.91      H21B N
ATOM   7871  CA  ARG    38      60.403  28.931 -13.548  1.00 43.59      H21B C
ATOM   7872  CB  ARG    38      59.987  30.401 -13.614  1.00 43.48      H21B C
ATOM   7873  CG  ARG    38      59.939  31.085 -12.277  1.00 47.20      H21B C
ATOM   7874  CD  ARG    38      60.930  32.217 -12.199  1.00 51.45      H21B C
ATOM   7875  NE  ARG    38      60.691  33.069 -11.037  1.00 57.33      H21B N
ATOM   7876  CZ  ARG    38      60.035  34.226 -11.083  1.00 60.44      H21B C
ATOM   7877  NH1 ARG    38      59.550  34.676 -12.236  1.00 61.49      H21B N
ATOM   7878  NH2 ARG    38      59.861  34.932  -9.974  1.00 62.75      H21B N
ATOM   7879  C   ARG    38      61.835  28.832 -13.061  1.00 43.70      H21B C
ATOM   7880  O   ARG    38      62.080  28.633 -11.868  1.00 42.17      H21B O
ATOM   7881  N   GLN    39      62.773  28.960 -14.001  1.00 44.87      H21B N
ATOM   7882  CA  GLN    39      64.213  29.023 -13.709  1.00 45.12      H21B C
ATOM   7883  CB  GLN    39      64.818  27.653 -13.955  1.00 41.61      H21B C
ATOM   7884  CG  GLN    39      66.312  27.567 -13.851  1.00 38.69      H21B C
ATOM   7885  CD  GLN    39      66.784  26.155 -14.143  1.00 38.75      H21B C
ATOM   7886  OE1 GLN    39      66.623  25.651 -15.267  1.00 38.09      H21B O
ATOM   7887  NE2 GLN    39      67.349  25.496 -13.131  1.00 34.80      H21B N
ATOM   7888  C   GLN    39      64.898  30.069 -14.607  1.00 46.70      H21B C
ATOM   7889  O   GLN    39      65.002  29.872 -15.813  1.00 48.11      H21B O
ATOM   7890  N   ALA    40      65.354  31.178 -14.032  1.00 48.34      H21B N
ATOM   7891  CA  ALA    40      66.033  32.219 -14.821  1.00 50.36      H21B C
ATOM   7892  CB  ALA    40      66.068  33.524 -14.048  1.00 48.17      H21B C
ATOM   7893  C   ALA    40      67.449  31.802 -15.175  1.00 51.42      H21B C
ATOM   7894  O   ALA    40      68.057  31.015 -14.469  1.00 51.99      H21B O
ATOM   7895  N   PRO    41      68.008  32.353 -16.260  1.00 53.51      H21B N
ATOM   7896  CD  PRO    41      67.494  33.481 -17.055  1.00 53.56      H21B C
ATOM   7897  CA  PRO    41      69.325  31.898 -16.732  1.00 54.44      H21B C
ATOM   7898  CB  PRO    41      69.695  32.911 -17.811  1.00 53.16      H21B C
ATOM   7899  CG  PRO    41      68.385  33.467 -18.267  1.00 54.68      H21B C
ATOM   7900  C   PRO    41      70.356  31.864 -15.607  1.00 54.76      H21B C
ATOM   7901  O   PRO    41      70.466  32.808 -14.833  1.00 54.35      H21B O
ATOM   7902  N   GLY    42      71.092  30.761 -15.517  1.00 54.62      H21B N
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ATOM   7903  CA  GLY    42      72.067  30.602 -14.458  1.00 55.36      H21B C
ATOM   7904  C   GLY    42      71.510  30.605 -13.039  1.00 57.03      H21B C
ATOM   7905  O   GLY    42      72.285  30.695 -12.087  1.00 57.54      H21B O
ATOM   7906  N   GLN    43      70.190  30.499 -12.882  1.00 57.38      H21B N
ATOM   7907  CA  GLN    43      69.556  30.603 -11.564  1.00 57.89      H21B C
ATOM   7908  CB  GLN    43      68.480  31.688 -11.585  1.00 62.24      H21B C
ATOM   7909  CG  GLN    43      69.024  33.096 -11.723  1.00 70.32      H21B C
ATOM   7910  CD  GLN    43      69.786  33.529 -10.490  1.00 74.85      H21B C
ATOM   7911  OE1 GLN    43      71.014  33.621 -10.506  1.00 78.51      H21B O
ATOM   7912  NE2 GLN    43      69.059  33.790  -9.404  1.00 79.48      H21B N
ATOM   7913  C   GLN    43      68.935  29.301 -11.058  1.00 55.77      H21B C
ATOM   7914  O   GLN    43      68.991  28.269 -11.725  1.00 54.47      H21B O
ATOM   7915  N   GLY    44      68.333  29.358  -9.873  1.00 53.17      H21B N
ATOM   7916  CA  GLY    44      67.761  28.153  -9.291  1.00 51.51      H21B C
ATOM   7917  C   GLY    44      66.307  27.935  -9.655  1.00 49.20      H21B C
ATOM   7918  O   GLY    44      65.633  28.875 -10.067  1.00 50.15      H21B O
ATOM   7919  N   LEU    45      65.812  26.709  -9.512  1.00 46.56      H21B N
ATOM   7920  CA  LEU    45      64.406  26.437  -9.803  1.00 45.04      H21B C
ATOM   7921  CB  LEU    45      64.111  24.944  -9.692  1.00 41.43      H21B C
ATOM   7922  CG  LEU    45      64.932  23.987 -10.558  1.00 40.15      H21B C
ATOM   7923  CD1 LEU    45      64.566  22.569 -10.200  1.00 37.42      H21B C
ATOM   7924  CD2 LEU    45      64.680  24.240 -12.030  1.00 39.47      H21B C
ATOM   7925  C   LEU    45      63.515  27.195  -8.819  1.00 45.66      H21B C
ATOM   7926  O   LEU    45      63.787  27.230  -7.621  1.00 44.89      H21B O
ATOM   7927  N   GLU    46      62.452  27.808  -9.332  1.00 45.83      H21B N
ATOM   7928  CA  GLU    46      61.463  28.445  -8.482  1.00 45.79      H21B C
ATOM   7929  CB  GLU    46      61.532  29.950  -8.679  1.00 47.33      H21B C
ATOM   7930  CG  GLU    46      61.516  30.727  -7.380  1.00 52.65      H21B C
ATOM   7931  CD  GLU    46      62.013  32.152  -7.546  1.00 56.81      H21B C
ATOM   7932  OE1 GLU    46      61.922  32.929  -6.566  1.00 59.52      H21B O
ATOM   7933  OE2 GLU    46      62.496  32.492  -8.654  1.00 58.17      H21B O
ATOM   7934  C   GLU    46      60.043  27.937  -8.760  1.00 45.68      H21B C
ATOM   7935  O   GLU    46      59.580  27.906  -9.909  1.00 44.98      H21B O
ATOM   7936  N   TRP    47      59.344  27.539  -7.705  1.00 44.68      H21B N
ATOM   7937  CA  TRP    47      57.964  27.103  -7.860  1.00 43.70      H21B C
ATOM   7938  CB  TRP    47      57.612  26.090  -6.780  1.00 46.89      H21B C
ATOM   7939  CG  TRP    47      56.206  25.542  -6.845  1.00 50.28      H21B C
ATOM   7940  CD2 TRP    47      55.053  26.055  -6.164  1.00 51.83      H21B C
ATOM   7941  CE2 TRP    47      53.994  25.161  -6.407  1.00 51.66      H21B C
ATOM   7942  CE3 TRP    47      54.818  27.181  -5.367  1.00 53.50      H21B C
ATOM   7943  CD1 TRP    47      55.800  24.395  -7.470  1.00 47.94      H21B C
ATOM   7944  NE1 TRP    47      54.475  24.159  -7.207  1.00 50.10      H21B N
ATOM   7945  CZ2 TRP    47      52.721  25.358  -5.882  1.00 53.80      H21B C
ATOM   7946  CZ3 TRP    47      53.556  27.375  -4.849  1.00 54.46      H21B C
ATOM   7947  CH2 TRP    47      52.524  26.469  -5.105  1.00 54.87      H21B C
ATOM   7948  C   TRP    47      57.025  28.294  -7.776  1.00 41.76      H21B C
ATOM   7949  O   TRP    47      57.174  29.156  -6.914  1.00 40.43      H21B O
ATOM   7950  N   MET    48      56.054  28.319  -8.683  1.00 40.99      H21B N
ATOM   7951  CA  MET    48      55.148  29.449  -8.853  1.00 39.09      H21B C
ATOM   7952  CB  MET    48      55.137  29.903 -10.300  1.00 39.03      H21B C
ATOM   7953  CG  MET    48      56.506  30.115 -10.893  1.00 43.44      H21B C
ATOM   7954  SD  MET    48      56.347  30.353 -12.653  1.00 43.36      H21B S
ATOM   7955  CE  MET    48      56.015  32.072 -12.708  1.00 46.47      H21B C
ATOM   7956  C   MET    48      53.735  29.074  -8.480  1.00 38.15      H21B C
ATOM   7957  O   MET    48      52.944  29.929  -8.102  1.00 38.64      H21B O
ATOM   7958  N   GLY    49      53.401  27.799  -8.620  1.00 37.00      H21B N
ATOM   7959  CA  GLY    49      52.054  27.391  -8.300  1.00 35.84      H21B C
ATOM   7960  C   GLY    49      51.577  26.060  -8.833  1.00 35.29      H21B C
ATOM   7961  O   GLY    49      52.330  25.301  -9.442  1.00 33.34      H21B O
ATOM   7962  N   TRP    50      50.300  25.788  -8.584  1.00 35.95      H21B N
ATOM   7963  CA  TRP    50      49.687  24.522  -8.948  1.00 38.80      H21B C
ATOM   7964  CB  TRP    50      49.799  23.571  -7.736  1.00 40.20      H21B C
ATOM   7965  CG  TRP    50      49.008  22.290  -7.818  1.00 27.92      H21B C
ATOM   7966  CD2 TRP    50      47.607  22.144  -7.581  1.00 30.40      H21B C
ATOM   7967  CE2 TRP    50      47.296  20.770  -7.682  1.00 33.19      H21B C
ATOM   7968  CE3 TRP    50      46.572  23.046  -7.278  1.00 30.96      H21B C
ATOM   7969  CD1 TRP    50      49.491  21.028  -8.057  1.00 29.31      H21B C
ATOM   7970  NE1 TRP    50      48.471  20.108  -7.977  1.00 32.07      H21B N
ATOM   7971  CZ2 TRP    50      46.003  20.271  -7.493  1.00 31.29      H21B C
ATOM   7972  CZ3 TRP    50      45.290  22.553  -7.086  1.00 33.31      H21B C
ATOM   7973  CH2 TRP    50      45.015  21.178  -7.192  1.00 32.81      H21B C
ATOM   7974  C   TRP    50      48.221  24.759  -9.387  1.00 41.34      H21B C
ATOM   7975  O   TRP    50      47.544  25.645  -8.864  1.00 40.95      H21B O
ATOM   7976  N   VAL    51      47.766  23.996 -10.382  1.00 43.51      H21B N
ATOM   7977  CA  VAL    51      46.375  24.028 -10.841  1.00 44.71      H21B C
ATOM   7978  CB  VAL    51      46.245  24.400 -12.333  1.00 44.92      H21B C
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ATOM   7979  CG1 VAL    51      45.148  25.428 -12.516  1.00 41.58      H21B C
ATOM   7980  CG2 VAL    51      47.561  24.873 -12.877  1.00 42.14      H21B C
ATOM   7981  C   VAL    51      45.813  22.622 -10.730  1.00 46.39      H21B C
ATOM   7982  O   VAL    51      46.561  21.650 -10.773  1.00 47.07      H21B O
ATOM   7983  N   SER    52      44.491  22.520 -10.621  1.00 46.89      H21B N
ATOM   7984  CA  SER    52      43.800  21.235 -10.530  1.00 47.12      H21B C
ATOM   7985  CB  SER    52      42.812  21.250  -9.373  1.00 46.23      H21B C
ATOM   7986  OG  SER    52      42.020  20.080  -9.375  1.00 43.24      H21B O
ATOM   7987  C   SER    52      43.046  20.895 -11.802  1.00 48.99      H21B C
ATOM   7988  O   SER    52      42.243  21.684 -12.297  1.00 47.79      H21B O
ATOM   7989  N   PHE    53      43.297  19.708 -12.329  1.00 51.06      H21B N
ATOM   7990  CA  PHE    53      42.536  19.241 -13.468  1.00 51.62      H21B C
ATOM   7991  CB  PHE    53      43.238  18.050 -14.110  1.00 49.15      H21B C
ATOM   7992  CG  PHE    53      43.992  18.401 -15.352  1.00 47.00      H21B C
ATOM   7993  CD1 PHE    53      45.359  18.196 -15.433  1.00 45.85      H21B C
ATOM   7994  CD2 PHE    53      43.330  18.930 -16.444  1.00 45.21      H21B C
ATOM   7995  CE1 PHE    53      46.046  18.511 -16.582  1.00 44.88      H21B C
ATOM   7996  CE2 PHE    53      44.015  19.250 -17.599  1.00 44.11      H21B C
ATOM   7997  CZ  PHE    53      45.372  19.038 -17.668  1.00 43.18      H21B C
ATOM   7998  C   PHE    53      41.158  18.839 -12.986  1.00 52.99      H21B C
ATOM   7999  O   PHE    53      40.161  19.146 -13.620  1.00 51.55      H21B O
ATOM   8000  N   TYR    54      41.119  18.160 -11.848  1.00 55.64      H21B N
ATOM   8001  CA  TYR    54      39.872  17.785 -11.202  1.00 58.44      H21B C
ATOM   8002  CB  TYR    54      40.162  17.329  -9.777  1.00 54.87      H21B C
ATOM   8003  CG  TYR    54      38.949  16.897  -9.001  1.00 51.36      H21B C
ATOM   8004  CD1 TYR    54      38.655  17.477  -7.774  1.00 48.87      H21B C
ATOM   8005  CE1 TYR    54      37.555  17.104  -7.058  1.00 49.07      H21B C
ATOM   8006  CD2 TYR    54      38.096  15.917  -9.494  1.00 47.97      H21B C
ATOM   8007  CE2 TYR    54      36.990  15.535  -8.786  1.00 47.93      H21B C
ATOM   8008  CZ  TYR    54      36.720  16.132  -7.563  1.00 49.35      H21B C
ATOM   8009  OH  TYR    54      35.618  15.755  -6.836  1.00 48.60      H21B O
ATOM   8010  C   TYR    54      38.835  18.912 -11.192  1.00 62.29      H21B C
ATOM   8011  O   TYR    54      37.946  18.949 -12.039  1.00 63.00      H21B O
ATOM   8012  N   ASN    55      38.923  19.827 -10.236  1.00 67.02      H21B N
ATOM   8013  CA  ASN    55      38.057  20.994 -10.293  1.00 71.09      H21B C
ATOM   8014  CB  ASN    55      37.730  21.518  -8.894  1.00 68.84      H21B C
ATOM   8015  CG  ASN    55      38.841  21.307  -7.921  1.00 67.93      H21B C
ATOM   8016  OD1 ASN    55      38.616  20.876  -6.797  1.00 67.67      H21B O
ATOM   8017  ND2 ASN    55      40.054  21.613  -8.338  1.00 69.63      H21B N
ATOM   8018  C   ASN    55      38.717  22.079 -11.118  1.00 74.37      H21B C
ATOM   8019  O   ASN    55      38.675  22.051 -12.347  1.00 75.61      H21B O
ATOM   8020  N   GLY    56      39.336  23.034 -10.449  1.00 76.48      H21B N
ATOM   8021  CA  GLY    56      40.142  23.993 -11.163  1.00 78.11      H21B C
ATOM   8022  C   GLY    56      40.842  24.836 -10.142  1.00 80.92      H21B C
ATOM   8023  O   GLY    56      41.260  25.945 -10.426  1.00 81.59      H21B O
ATOM   8024  N   ASN    57      40.959  24.307  -8.935  1.00 83.69      H21B N
ATOM   8025  CA  ASN    57      41.543  25.062  -7.846  1.00 84.39      H21B C
ATOM   8026  CB  ASN    57      41.483  24.249  -6.559  1.00 88.07      H21B C
ATOM   8027  CG  ASN    57      40.069  23.968  -6.121  1.00 90.83      H21B C
ATOM   8028  OD1 ASN    57      39.142  24.677  -6.501  1.00 92.97      H21B O
ATOM   8029  ND2 ASN    57      39.892  22.927  -5.319  1.00 92.57      H21B N
ATOM   8030  C   ASN    57      42.978  25.426  -8.172  1.00 81.95      H21B C
ATOM   8031  O   ASN    57      43.665  24.701  -8.883  1.00 82.38      H21B O
ATOM   8032  N   THR    58      43.422  26.566  -7.663  1.00 77.98      H21B N
ATOM   8033  CA  THR    58      44.770  27.034  -7.924  1.00 74.72      H21B C
ATOM   8034  CB  THR    58      44.751  28.353  -8.715  1.00 76.41      H21B C
ATOM   8035  OG1 THR    58      43.878  29.282  -8.070  1.00 77.32      H21B O
ATOM   8036  CG2 THR    58      44.265  28.121 -10.131  1.00 77.44      H21B C
ATOM   8037  C   THR    58      45.492  27.240  -6.609  1.00 71.58      H21B C
ATOM   8038  O   THR    58      44.864  27.368  -5.569  1.00 70.30      H21B O
ATOM   8039  N   ASN    59      46.817  27.242  -6.649  1.00 69.82      H21B N
ATOM   8040  CA  ASN    59      47.611  27.653  -5.500  1.00 68.25      H21B C
ATOM   8041  CB  ASN    59      48.109  26.428  -4.740  1.00 65.64      H21B C
ATOM   8042  CG  ASN    59      48.845  26.787  -3.473  1.00 64.96      H21B C
ATOM   8043  OD1 ASN    59      48.733  27.899  -2.966  1.00 65.43      H21B O
ATOM   8044  ND2 ASN    59      49.609  25.840  -2.953  1.00 65.84      H21B N
ATOM   8045  C   ASN    59      48.780  28.460  -6.034  1.00 68.81      H21B C
ATOM   8046  O   ASN    59      49.547  27.972  -6.851  1.00 68.36      H21B O
ATOM   8047  N   TYR    60      48.899  29.704  -5.588  1.00 70.01      H21B N
ATOM   8048  CA  TYR    60      49.915  30.607  -6.115  1.00 70.19      H21B C
ATOM   8049  CB  TYR    60      49.286  31.940  -6.547  1.00 64.48      H21B C
ATOM   8050  CG  TYR    60      48.377  31.831  -7.747  1.00 56.84      H21B C
ATOM   8051  CD1 TYR    60      48.894  31.719  -9.029  1.00 54.39      H21B C
ATOM   8052  CE1 TYR    60      48.061  31.542 -10.120  1.00 49.77      H21B C
ATOM   8053  CD2 TYR    60      47.005  31.776  -7.594  1.00 52.06      H21B C
ATOM   8054  CE2 TYR    60      46.176  31.602  -8.672  1.00 47.45      H21B C
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ATOM   8055  CZ  TYR    60      46.706  31.481  -9.930  1.00 47.20      H21B C
ATOM   8056  OH  TYR    60      45.873  31.262 -10.999  1.00 45.04      H21B O
ATOM   8057  C   TYR    60      51.011  30.876  -5.101  1.00 73.82      H21B C
ATOM   8058  O   TYR    60      50.773  30.873  -3.899  1.00 74.53      H21B O
ATOM   8059  N   ALA    61      52.216  31.105  -5.608  1.00 79.37      H21B N
ATOM   8060  CA  ALA    61      53.339  31.530  -4.791  1.00 86.15      H21B C
ATOM   8061  CB  ALA    61      54.629  31.211  -5.508  1.00 79.56      H21B C
ATOM   8062  C   ALA    61      53.236  33.031  -4.518  1.00 93.30      H21B C
ATOM   8063  O   ALA    61      52.501  33.743  -5.194  1.00 94.02      H21B O
ATOM   8064  N   GLN    62      53.972  33.509  -3.523  1.00102.91      H21B N
ATOM   8065  CA  GLN    62      53.978  34.930  -3.199  1.00111.50      H21B C
ATOM   8066  CB  GLN    62      55.022  35.221  -2.123  1.00113.10      H21B C
ATOM   8067  CG  GLN    62      54.598  36.265  -1.105  1.00114.99      H21B C
ATOM   8068  CD  GLN    62      53.632  35.705  -0.080  1.00115.65      H21B C
ATOM   8069  OE1 GLN    62      53.671  36.073   1.096  1.00115.70      H21B O
ATOM   8070  NE2 GLN    62      52.756  34.805  -0.521  1.00116.17      H21B N
ATOM   8071  C   GLN    62      54.282  35.778  -4.426  1.00115.83      H21B C
ATOM   8072  O   GLN    62      53.402  36.445  -4.953  1.00118.69      H21B O
ATOM   8073  N   LYS    63      55.532  35.745  -4.877  1.00120.29      H21B N
ATOM   8074  CA  LYS    63      55.975  36.610  -5.965  1.00123.83      H21B C
ATOM   8075  CB  LYS    63      57.238  36.042  -6.623  1.00126.62      H21B C
ATOM   8076  CG  LYS    63      58.518  36.271  -5.828  1.00129.64      H21B C
ATOM   8077  CD  LYS    63      59.760  36.088  -6.696  1.00132.38      H21B C
ATOM   8078  CE  LYS    63      61.026  36.494  -5.951  1.00134.60      H21B C
ATOM   8079  NZ  LYS    63      62.235  36.420  -6.816  1.00135.68      H21B N
ATOM   8080  C   LYS    63      54.892  36.781  -7.018  1.00125.33      H21B C
ATOM   8081  O   LYS    63      54.362  37.876  -7.210  1.00125.28      H21B O
ATOM   8082  N   LEU    64      54.558  35.691  -7.695  1.00127.68      H21B N
ATOM   8083  CA  LEU    64      53.576  35.745  -8.764  1.00130.37      H21B C
ATOM   8084  CB  LEU    64      53.597  34.444  -9.568  1.00132.98      H21B C
ATOM   8085  CG  LEU    64      54.806  34.276 -10.494  1.00136.29      H21B C
ATOM   8086  CD1 LEU    64      54.818  35.403 -11.518  1.00138.41      H21B C
ATOM   8087  CD2 LEU    64      56.100  34.275  -9.685  1.00138.56      H21B C
ATOM   8088  C   LEU    64      52.187  35.983  -8.198  1.00130.44      H21B C
ATOM   8089  O   LEU    64      51.278  35.176  -8.400  1.00130.29      H21B O
ATOM   8090  N   GLN    65      52.027  37.100  -7.489  1.00129.19      H21B N
ATOM   8091  CA  GLN    65      50.749  37.424  -6.870  1.00127.17      H21B C
ATOM   8092  CB  GLN    65      50.948  37.952  -5.451  1.00131.48      H21B C
ATOM   8093  CG  GLN    65      49.744  37.693  -4.556  1.00137.16      H21B C
ATOM   8094  CD  GLN    65      49.179  36.287  -4.742  1.00140.29      H21B C
ATOM   8095  OE1 GLN    65      47.964  36.082  -4.713  1.00142.41      H21B O
ATOM   8096  NE2 GLN    65      50.064  35.313  -4.936  1.00142.71      H21B N
ATOM   8097  C   GLN    65      49.958  38.437  -7.676  1.00121.86      H21B C
ATOM   8098  O   GLN    65      50.422  39.546  -7.930  1.00123.39      H21B O
ATOM   8099  N   GLY    66      48.750  38.041  -8.059  1.00114.88      H21B N
ATOM   8100  CA  GLY    66      47.966  38.820  -8.993  1.00104.98      H21B C
ATOM   8101  C   GLY    66      48.484  38.624 -10.400  1.00 96.86      H21B C
ATOM   8102  O   GLY    66      47.711  38.410 -11.334  1.00 97.14      H21B O
ATOM   8103  N   ARG    67      49.806  38.681 -10.538  1.00 88.00      H21B N
ATOM   8104  CA  ARG    67      50.467  38.666 -11.838  1.00 78.28      H21B C
ATOM   8105  CB  ARG    67      51.980  38.806 -11.662  1.00 79.16      H21B C
ATOM   8106  CG  ARG    67      52.424  40.093 -11.021  1.00 78.42      H21B C
ATOM   8107  CD  ARG    67      53.594  40.703 -11.775  1.00 76.25      H21B C
ATOM   8108  NE  ARG    67      54.808  39.901 -11.670  1.00 70.42      H21B N
ATOM   8109  CZ  ARG    67      55.549  39.532 -12.711  1.00 67.25      H21B C
ATOM   8110  NH1 ARG    67      55.197  39.891 -13.941  1.00 63.82      H21B N
ATOM   8111  NH2 ARG    67      56.643  38.804 -12.522  1.00 62.44      H21B N
ATOM   8112  C   ARG    67      50.183  37.376 -12.587  1.00 72.34      H21B C
ATOM   8113  O   ARG    67      50.251  37.328 -13.818  1.00 67.98      H21B O
ATOM   8114  N   GLY    68      49.879  36.327 -11.831  1.00 67.36      H21B N
ATOM   8115  CA  GLY    68      49.791  35.003 -12.411  1.00 61.33      H21B C
ATOM   8116  C   GLY    68      48.384  34.459 -12.429  1.00 57.15      H21B C
ATOM   8117  O   GLY    68      47.615  34.658 -11.487  1.00 54.96      H21B O
ATOM   8118  N   THR    69      48.058  33.773 -13.519  1.00 52.86      H21B N
ATOM   8119  CA  THR    69      46.802  33.040 -13.640  1.00 49.43      H21B C
ATOM   8120  CB  THR    69      45.755  33.817 -14.466  1.00 47.25      H21B C
ATOM   8121  OG1 THR    69      45.372  35.009 -13.771  1.00 46.17      H21B O
ATOM   8122  CG2 THR    69      44.536  32.955 -14.699  1.00 43.40      H21B C
ATOM   8123  C   THR    69      47.002  31.698 -14.325  1.00 46.56      H21B C
ATOM   8124  O   THR    69      47.148  31.639 -15.539  1.00 46.53      H21B O
ATOM   8125  N   MET    70      46.997  30.618 -13.558  1.00 44.10      H21B N
ATOM   8126  CA  MET    70      46.975  29.311 -14.185  1.00 42.39      H21B C
ATOM   8127  CB  MET    70      47.990  28.360 -13.551  1.00 41.28      H21B C
ATOM   8128  CG  MET    70      48.171  28.515 -12.084  1.00 40.21      H21B C
ATOM   8129  SD  MET    70      49.850  28.066 -11.687  1.00 39.87      H21B S
ATOM   8130  CE  MET    70      49.867  28.560 -10.019  1.00 44.15      H21B C
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ATOM   8131  C   MET   70      45.613  28.668 -14.181  1.00 40.27      H21B C
ATOM   8132  O   MET   70      44.851  28.780 -13.230  1.00 40.48      H21B O
ATOM   8133  N   THR   71      45.329  27.981 -15.273  1.00 40.53      H21B N
ATOM   8134  CA  THR   71      44.026  27.413 -15.512  1.00 41.99      H21B C
ATOM   8135  CB  THR   71      43.219  28.301 -16.470  1.00 41.68      H21B C
ATOM   8136  OG1 THR   71      43.930  28.448 -17.710  1.00 40.43      H21B O
ATOM   8137  CG2 THR   71      42.978  29.653 -15.841  1.00 39.62      H21B C
ATOM   8138  C   THR   71      44.154  26.021 -16.112  1.00 43.75      H21B C
ATOM   8139  O   THR   71      45.248  25.511 -16.296  1.00 41.50      H21B O
ATOM   8140  N   THR   72      43.015  25.422 -16.422  1.00 48.73      H21B N
ATOM   8141  CA  THR   72      42.960  24.041 -16.873  1.00 53.25      H21B C
ATOM   8142  CB  THR   72      42.802  23.107 -15.652  1.00 52.17      H21B C
ATOM   8143  OG1 THR   72      44.095  22.675 -15.216  1.00 53.13      H21B O
ATOM   8144  CG2 THR   72      41.942  21.918 -15.981  1.00 53.23      H21B C
ATOM   8145  C   THR   72      41.803  23.831 -17.865  1.00 55.94      H21B C
ATOM   8146  O   THR   72      40.699  24.344 -17.663  1.00 56.70      H21B O
ATOM   8147  N   ASP   73      42.083  23.113 -18.954  1.00 57.69      H21B N
ATOM   8148  CA  ASP   73      41.046  22.553 -19.811  1.00 58.33      H21B C
ATOM   8149  CB  ASP   73      41.142  23.100 -21.238  1.00 61.28      H21B C
ATOM   8150  CG  ASP   73      40.250  22.338 -22.218  1.00 63.71      H21B C
ATOM   8151  OD1 ASP   73      40.367  22.558 -23.442  1.00 64.93      H21B O
ATOM   8152  OD2 ASP   73      39.429  21.513 -21.768  1.00 64.36      H21B O
ATOM   8153  C   ASP   73      41.216  21.048 -19.849  1.00 57.27      H21B C
ATOM   8154  O   ASP   73      42.090  20.523 -20.529  1.00 58.48      H21B O
ATOM   8155  N   PRO   74      40.375  20.327 -19.110  1.00 56.40      H21B N
ATOM   8156  CD  PRO   74      39.411  20.780 -18.097  1.00 55.90      H21B C
ATOM   8157  CA  PRO   74      40.518  18.875 -19.105  1.00 56.74      H21B C
ATOM   8158  CB  PRO   74      39.543  18.424 -18.015  1.00 55.19      H21B C
ATOM   8159  CG  PRO   74      39.364  19.611 -17.157  1.00 53.64      H21B C
ATOM   8160  C   PRO   74      40.207  18.253 -20.460  1.00 56.88      H21B C
ATOM   8161  O   PRO   74      40.761  17.220 -20.816  1.00 57.34      H21B O
ATOM   8162  N   SER   75      39.320  18.874 -21.221  1.00 57.92      H21B N
ATOM   8163  CA  SER   75      38.854  18.220 -22.428  1.00 58.36      H21B C
ATOM   8164  CB  SER   75      37.682  18.978 -23.039  1.00 57.07      H21B C
ATOM   8165  OG  SER   75      38.122  20.173 -23.637  1.00 57.34      H21B O
ATOM   8166  C   SER   75      39.989  18.122 -23.426  1.00 58.17      H21B C
ATOM   8167  O   SER   75      40.015  17.212 -24.251  1.00 60.52      H21B O
ATOM   8168  N   THR   76      40.934  19.055 -23.342  1.00 56.65      H21B N
ATOM   8169  CA  THR   76      42.126  19.003 -24.184  1.00 54.54      H21B C
ATOM   8170  CB  THR   76      42.418  20.352 -24.850  1.00 55.46      H21B C
ATOM   8171  OG1 THR   76      42.689  21.336 -23.846  1.00 57.17      H21B O
ATOM   8172  CG2 THR   76      41.239  20.791 -25.679  1.00 55.89      H21B C
ATOM   8173  C   THR   76      43.378  18.586 -23.419  1.00 52.21      H21B C
ATOM   8174  O   THR   76      44.479  18.660 -23.955  1.00 51.31      H21B O
ATOM   8175  N   SER   77      43.205  18.150 -22.175  1.00 50.10      H21B N
ATOM   8176  CA  SER   77      44.314  17.651 -21.369  1.00 48.00      H21B C
ATOM   8177  CB  SER   77      44.801  16.302 -21.905  1.00 48.42      H21B C
ATOM   8178  OG  SER   77      44.105  15.938 -23.088  1.00 50.53      H21B O
ATOM   8179  C   SER   77      45.451  18.660 -21.383  1.00 46.50      H21B C
ATOM   8180  O   SER   77      46.607  18.312 -21.612  1.00 45.85      H21B O
ATOM   8181  N   THR   78      45.100  19.916 -21.128  1.00 44.26      H21B N
ATOM   8182  CA  THR   78      46.027  21.026 -21.253  1.00 42.27      H21B C
ATOM   8183  CB  THR   78      45.777  21.774 -22.577  1.00 43.01      H21B C
ATOM   8184  OG1 THR   78      46.092  20.906 -23.666  1.00 42.58      H21B O
ATOM   8185  CG2 THR   78      46.641  23.019 -22.676  1.00 41.56      H21B C
ATOM   8186  C   THR   78      45.909  22.007 -20.084  1.00 41.93      H21B C
ATOM   8187  O   THR   78      44.816  22.455 -19.739  1.00 41.80      H21B O
ATOM   8188  N   ALA   79      47.046  22.336 -19.477  1.00 41.30      H21B N
ATOM   8189  CA  ALA   79      47.082  23.328 -18.415  1.00 43.41      H21B C
ATOM   8190  CB  ALA   79      47.823  22.778 -17.197  1.00 39.93      H21B C
ATOM   8191  C   ALA   79      47.791  24.559 -18.944  1.00 46.13      H21B C
ATOM   8192  O   ALA   79      48.574  24.466 -19.899  1.00 46.64      H21B O
ATOM   8193  N   TYR   80      47.521  25.711 -18.337  1.00 47.82      H21B N
ATOM   8194  CA  TYR   80      48.086  26.950 -18.843  1.00 50.58      H21B C
ATOM   8195  CB  TYR   80      47.013  27.771 -19.561  1.00 51.23      H21B C
ATOM   8196  CG  TYR   80      46.386  27.079 -20.743  1.00 51.15      H21B C
ATOM   8197  CD1 TYR   80      45.311  26.214 -20.572  1.00 51.00      H21B C
ATOM   8198  CE1 TYR   80      44.719  25.589 -21.650  1.00 52.73      H21B C
ATOM   8199  CD2 TYR   80      46.856  27.303 -22.034  1.00 51.74      H21B C
ATOM   8200  CE2 TYR   80      46.268  26.687 -23.126  1.00 53.17      H21B C
ATOM   8201  CZ  TYR   80      45.200  25.828 -22.928  1.00 55.28      H21B C
ATOM   8202  OH  TYR   80      44.619  25.186 -24.006  1.00 58.32      H21B O
ATOM   8203  C   TYR   80      48.731  27.812 -17.772  1.00 51.42      H21B C
ATOM   8204  O   TYR   80      48.313  27.831 -16.614  1.00 50.53      H21B O
ATOM   8205  N   MET   81      49.755  28.537 -18.186  1.00 53.11      H21B N
ATOM   8206  CA  MET   81      50.388  29.514 -17.331  1.00 56.14      H21B C
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ATOM   8207  CB  MET    81      51.833  29.080 -17.073  1.00 57.65      H21B C
ATOM   8208  CG  MET    81      52.753  30.176 -16.565  1.00 58.66      H21B C
ATOM   8209  SD  MET    81      52.254  30.897 -14.991  1.00 57.87      H21B S
ATOM   8210  CE  MET    81      53.575  32.092 -14.801  1.00 54.87      H21B C
ATOM   8211  C   MET    81      50.336  30.872 -18.029  1.00 58.01      H21B C
ATOM   8212  O   MET    81      51.015  31.089 -19.033  1.00 56.65      H21B O
ATOM   8213  N   GLU    82      49.514  31.781 -17.514  1.00 61.28      H21B N
ATOM   8214  CA  GLU    82      49.511  33.149 -18.018  1.00 65.13      H21B C
ATOM   8215  CB  GLU    82      48.100  33.623 -18.342  1.00 68.11      H21B C
ATOM   8216  CG  GLU    82      48.049  35.126 -18.580  1.00 75.01      H21B C
ATOM   8217  CD  GLU    82      46.699  35.614 -19.041  1.00 78.54      H21B C
ATOM   8218  OE1 GLU    82      46.537  36.847 -19.191  1.00 80.65      H21B O
ATOM   8219  OE2 GLU    82      45.802  34.770 -19.253  1.00 85.32      H21B O
ATOM   8220  C   GLU    82      50.126  34.125 -17.035  1.00 65.78      H21B C
ATOM   8221  O   GLU    82      49.752  34.156 -15.866  1.00 64.06      H21B O
ATOM   8222  N   LEU    83      51.063  34.928 -17.532  1.00 68.70      H21B N
ATOM   8223  CA  LEU    83      51.749  35.920 -16.718  1.00 72.23      H21B C
ATOM   8224  CB  LEU    83      53.227  35.574 -16.610  1.00 69.70      H21B C
ATOM   8225  CG  LEU    83      53.852  35.648 -15.223  1.00 67.44      H21B C
ATOM   8226  CD1 LEU    83      55.336  35.825 -15.388  1.00 66.44      H21B C
ATOM   8227  CD2 LEU    83      53.273  36.788 -14.430  1.00 65.57      H21B C
ATOM   8228  C   LEU    83      51.601  37.309 -17.330  1.00 75.95      H21B C
ATOM   8229  O   LEU    83      51.904  37.512 -18.504  1.00 75.65      H21B O
ATOM   8230  N   ARG    84      51.147  38.261 -16.520  1.00 80.89      H21B N
ATOM   8231  CA  ARG    84      50.822  39.601 -16.992  1.00 84.83      H21B C
ATOM   8232  CB  ARG    84      49.499  40.064 -16.380  1.00 90.56      H21B C
ATOM   8233  CG  ARG    84      48.344  39.114 -16.614  1.00100.33      H21B C
ATOM   8234  CD  ARG    84      47.315  39.202 -15.499  1.00109.68      H21B C
ATOM   8235  NE  ARG    84      46.461  38.020 -15.475  1.00120.80      H21B N
ATOM   8236  CZ  ARG    84      45.558  37.737 -16.408  1.00127.57      H21B C
ATOM   8237  NH1 ARG    84      44.822  36.638 -16.309  1.00132.02      H21B N
ATOM   8238  NH2 ARG    84      45.389  38.556 -17.439  1.00132.38      H21B N
ATOM   8239  C   ARG    84      51.914  40.585 -16.612  1.00 83.70      H21B C
ATOM   8240  O   ARG    84      52.734  40.303 -15.739  1.00 84.67      H21B O
ATOM   8241  N   SER    85      51.916  41.741 -17.272  1.00 81.90      H21B N
ATOM   8242  CA  SER    85      52.799  42.840 -16.896  1.00 79.14      H21B C
ATOM   8243  CB  SER    85      52.363  43.449 -15.557  1.00 78.89      H21B C
ATOM   8244  OG  SER    85      51.028  43.919 -15.602  1.00 75.63      H21B O
ATOM   8245  C   SER    85      54.221  42.330 -16.772  1.00 77.66      H21B C
ATOM   8246  O   SER    85      54.863  42.496 -15.733  1.00 77.42      H21B O
ATOM   8247  N   LEU    86      54.704  41.701 -17.838  1.00 75.99      H21B N
ATOM   8248  CA  LEU    86      56.022  41.085 -17.836  1.00 74.39      H21B C
ATOM   8249  CB  LEU    86      56.258  40.346 -19.157  1.00 71.64      H21B C
ATOM   8250  CG  LEU    86      55.451  39.062 -19.373  1.00 69.27      H21B C
ATOM   8251  CD1 LEU    86      55.543  38.610 -20.823  1.00 67.28      H21B C
ATOM   8252  CD2 LEU    86      55.969  37.989 -18.435  1.00 67.92      H21B C
ATOM   8253  C   LEU    86      57.126  42.111 -17.616  1.00 74.83      H21B C
ATOM   8254  O   LEU    86      57.262  43.060 -18.378  1.00 73.84      H21B O
ATOM   8255  N   ARG    87      57.898  41.916 -16.554  1.00 76.20      H21B N
ATOM   8256  CA  ARG    87      59.179  42.585 -16.402  1.00 77.36      H21B C
ATOM   8257  CB  ARG    87      59.621  42.614 -14.939  1.00 78.84      H21B C
ATOM   8258  CG  ARG    87      58.580  43.085 -13.960  1.00 81.26      H21B C
ATOM   8259  CD  ARG    87      59.149  43.110 -12.555  1.00 83.79      H21B C
ATOM   8260  NE  ARG    87      58.087  43.040 -11.560  1.00 86.95      H21B N
ATOM   8261  CZ  ARG    87      57.869  41.994 -10.775  1.00 89.17      H21B C
ATOM   8262  NH1 ARG    87      56.870  42.022  -9.901  1.00 90.14      H21B N
ATOM   8263  NH2 ARG    87      58.655  40.925 -10.858  1.00 90.65      H21B N
ATOM   8264  C   ARG    87      60.208  41.797 -17.182  1.00 77.52      H21B C
ATOM   8265  O   ARG    87      59.898  40.774 -17.787  1.00 78.03      H21B O
ATOM   8266  N   SER    88      61.442  42.278 -17.143  1.00 77.89      H21B N
ATOM   8267  CA  SER    88      62.579  41.526 -17.647  1.00 76.92      H21B C
ATOM   8268  CB  SER    88      63.693  42.497 -18.027  1.00 76.95      H21B C
ATOM   8269  OG  SER    88      63.875  43.471 -17.016  1.00 76.63      H21B O
ATOM   8270  C   SER    88      63.076  40.519 -16.600  1.00 76.23      H21B C
ATOM   8271  O   SER    88      63.913  39.673 -16.902  1.00 75.13      H21B O
ATOM   8272  N   ASP    89      62.549  40.617 -15.377  1.00 76.04      H21B N
ATOM   8273  CA  ASP    89      62.825  39.646 -14.307  1.00 74.28      H21B C
ATOM   8274  CB  ASP    89      62.387  40.196 -12.941  1.00 78.49      H21B C
ATOM   8275  CG  ASP    89      62.941  41.586 -12.649  1.00 82.47      H21B C
ATOM   8276  OD1 ASP    89      62.171  42.451 -12.167  1.00 84.19      H21B O
ATOM   8277  OD2 ASP    89      64.143  41.816 -12.890  1.00 84.83      H21B O
ATOM   8278  C   ASP    89      62.073  38.334 -14.552  1.00 70.50      H21B C
ATOM   8279  O   ASP    89      62.232  37.372 -13.807  1.00 69.35      H21B O
ATOM   8280  N   ASP    90      61.240  38.321 -15.589  1.00 66.65      H21B N
ATOM   8281  CA  ASP    90      60.393  37.176 -15.916  1.00 61.73      H21B C
ATOM   8282  CB  ASP    90      59.011  37.644 -16.368  1.00 61.77      H21B C
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ATOM   8283  CG  ASP    90      58.318  38.488 -15.329  1.00 61.61      H21B C
ATOM   8284  OD1 ASP    90      58.704  38.408 -14.145  1.00 62.01      H21B O
ATOM   8285  OD2 ASP    90      57.385  39.235 -15.696  1.00 62.33      H21B O
ATOM   8286  C   ASP    90      61.026  36.382 -17.033  1.00 57.28      H21B C
ATOM   8287  O   ASP    90      60.504  35.356 -17.451  1.00 57.29      H21B O
ATOM   8288  N   THR    91      62.145  36.873 -17.533  1.00 53.21      H21B N
ATOM   8289  CA  THR    91      62.907  36.114 -18.499  1.00 50.91      H21B C
ATOM   8290  CB  THR    91      64.019  36.957 -19.130  1.00 51.25      H21B C
ATOM   8291  OG1 THR    91      63.440  37.861 -20.079  1.00 52.40      H21B O
ATOM   8292  CG2 THR    91      65.025  36.065 -19.834  1.00 49.86      H21B C
ATOM   8293  C   THR    91      63.526  34.900 -17.832  1.00 47.55      H21B C
ATOM   8294  O   THR    91      64.316  35.024 -16.892  1.00 46.34      H21B O
ATOM   8295  N   ALA    92      63.156  33.726 -18.334  1.00 43.20      H21B N
ATOM   8296  CA  ALA    92      63.539  32.482 -17.700  1.00 40.41      H21B C
ATOM   8297  CB  ALA    92      63.041  32.459 -16.267  1.00 40.90      H21B C
ATOM   8298  C   ALA    92      62.990  31.292 -18.456  1.00 37.21      H21B C
ATOM   8299  O   ALA    92      62.242  31.430 -19.415  1.00 38.12      H21B O
ATOM   8300  N   VAL    93      63.380  30.109 -18.027  1.00 34.64      H21B N
ATOM   8301  CA  VAL    93      62.733  28.919 -18.513  1.00 32.99      H21B C
ATOM   8302  CB  VAL    93      63.750  27.793 -18.666  1.00 30.83      H21B C
ATOM   8303  CG1 VAL    93      63.044  26.455 -18.927  1.00 26.30      H21B C
ATOM   8304  CG2 VAL    93      64.672  28.142 -19.822  1.00 25.24      H21B C
ATOM   8305  C   VAL    93      61.595  28.521 -17.574  1.00 31.86      H21B C
ATOM   8306  O   VAL    93      61.729  28.533 -16.348  1.00 29.01      H21B O
ATOM   8307  N   TYR    94      60.458  28.214 -18.180  1.00 32.50      H21B N
ATOM   8308  CA  TYR    94      59.251  27.901 -17.441  1.00 34.02      H21B C
ATOM   8309  CB  TYR    94      58.111  28.813 -17.900  1.00 31.77      H21B C
ATOM   8310  CG  TYR    94      58.243  30.236 -17.393  1.00 30.96      H21B C
ATOM   8311  CD1 TYR    94      57.570  30.650 -16.240  1.00 29.84      H21B C
ATOM   8312  CE1 TYR    94      57.696  31.944 -15.754  1.00 27.78      H21B C
ATOM   8313  CD2 TYR    94      59.047  31.164 -18.049  1.00 28.53      H21B C
ATOM   8314  CE2 TYR    94      59.179  32.472 -17.564  1.00 28.29      H21B C
ATOM   8315  CZ  TYR    94      58.503  32.852 -16.412  1.00 28.76      H21B C
ATOM   8316  OH  TYR    94      58.659  34.126 -15.884  1.00 29.65      H21B O
ATOM   8317  C   TYR    94      58.907  26.443 -17.681  1.00 33.72      H21B C
ATOM   8318  O   TYR    94      58.750  26.005 -18.821  1.00 34.33      H21B O
ATOM   8319  N   TYR    95      58.824  25.694 -16.591  1.00 35.12      H21B N
ATOM   8320  CA  TYR    95      58.441  24.289 -16.634  1.00 35.54      H21B C
ATOM   8321  CB  TYR    95      59.442  23.437 -15.862  1.00 37.61      H21B C
ATOM   8322  CG  TYR    95      60.852  23.484 -16.396  1.00 39.36      H21B C
ATOM   8323  CD1 TYR    95      61.187  22.835 -17.578  1.00 40.65      H21B C
ATOM   8324  CE1 TYR    95      62.476  22.841 -18.055  1.00 40.50      H21B C
ATOM   8325  CD2 TYR    95      61.856  24.146 -15.703  1.00 39.61      H21B C
ATOM   8326  CE2 TYR    95      63.155  24.155 -16.173  1.00 40.63      H21B C
ATOM   8327  CZ  TYR    95      63.460  23.502 -17.351  1.00 40.83      H21B C
ATOM   8328  OH  TYR    95      64.750  23.515 -17.834  1.00 41.60      H21B O
ATOM   8329  C   TYR    95      57.066  24.073 -16.024  1.00 34.62      H21B C
ATOM   8330  O   TYR    95      56.654  24.772 -15.087  1.00 29.49      H21B O
ATOM   8331  N   CYS    96      56.358  23.095 -16.570  1.00 36.69      H21B N
ATOM   8332  CA  CYS    96      55.310  22.427 -15.825  1.00 39.27      H21B C
ATOM   8333  C   CYS    96      55.813  21.042 -15.431  1.00 40.20      H21B C
ATOM   8334  O   CYS    96      56.535  20.390 -16.182  1.00 38.24      H21B O
ATOM   8335  CB  CYS    96      54.026  22.325 -16.657  1.00 38.82      H21B C
ATOM   8336  SG  CYS    96      54.180  21.440 -18.241  1.00 47.25      H21B S
ATOM   8337  N   ALA    97      55.453  20.620 -14.229  1.00 42.79      H21B N
ATOM   8338  CA  ALA    97      55.651  19.248 -13.802  1.00 45.99      H21B C
ATOM   8339  CB  ALA    97      56.701  19.189 -12.703  1.00 47.19      H21B C
ATOM   8340  C   ALA    97      54.320  18.724 -13.281  1.00 48.49      H21B C
ATOM   8341  O   ALA    97      53.412  19.504 -12.983  1.00 46.95      H21B O
ATOM   8342  N   ARG    98      54.207  17.401 -13.187  1.00 51.41      H21B N
ATOM   8343  CA  ARG    98      53.047  16.760 -12.588  1.00 53.37      H21B C
ATOM   8344  CB  ARG    98      53.046  15.269 -12.932  1.00 51.25      H21B C
ATOM   8345  CG  ARG    98      51.663  14.667 -13.187  1.00 49.60      H21B C
ATOM   8346  CD  ARG    98      51.753  13.294 -13.836  1.00 45.00      H21B C
ATOM   8347  NE  ARG    98      52.484  12.364 -12.984  1.00 44.76      H21B N
ATOM   8348  CZ  ARG    98      52.421  11.041 -13.085  1.00 43.23      H21B C
ATOM   8349  NH1 ARG    98      51.657  10.481 -14.007  1.00 44.12      H21B N
ATOM   8350  NH2 ARG    98      53.126  10.279 -12.262  1.00 42.06      H21B N
ATOM   8351  C   ARG    98      53.123  16.958 -11.075  1.00 56.47      H21B C
ATOM   8352  O   ARG    98      53.021  16.006 -10.315  1.00 57.42      H21B O
ATOM   8353  N   GLY    99      53.323  18.208 -10.653  1.00 59.29      H21B N
ATOM   8354  CA  GLY    99      53.343  18.538  -9.238  1.00 59.64      H21B C
ATOM   8355  C   GLY    99      52.179  17.874  -8.542  1.00 60.62      H21B C
ATOM   8356  O   GLY    99      51.325  17.298  -9.215  1.00 60.20      H21B O
ATOM   8357  N   TYR   100      52.130  17.940  -7.213  1.00 62.03      H21B N
ATOM   8358  CA  TYR   100      53.124  18.643  -6.419  1.00 62.23      H21B C
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ATOM   8359  CB  TYR   100      52.626  18.808  -4.981  1.00 63.21      H21B C
ATOM   8360  CG  TYR   100      51.617  19.916  -4.795  1.00 66.99      H21B C
ATOM   8361  CD1 TYR   100      50.253  19.662  -4.865  1.00 69.20      H21B C
ATOM   8362  CE1 TYR   100      49.326  20.676  -4.719  1.00 69.60      H21B C
ATOM   8363  CD2 TYR   100      52.026  21.219  -4.570  1.00 67.54      H21B C
ATOM   8364  CE2 TYR   100      51.105  22.236  -4.423  1.00 70.27      H21B C
ATOM   8365  CZ  TYR   100      49.757  21.960  -4.499  1.00 69.88      H21B C
ATOM   8366  OH  TYR   100      48.846  22.975  -4.357  1.00 68.94      H21B O
ATOM   8367  C   TYR   100      54.467  17.916  -6.412  1.00 61.98      H21B C
ATOM   8368  O   TYR   100      55.521  18.539  -6.522  1.00 63.49      H21B O
ATOM   8369  N   GLY   101      54.432  16.595  -6.292  1.00 59.53      H21B N
ATOM   8370  CA  GLY   101      55.663  15.839  -6.187  1.00 55.46      H21B C
ATOM   8371  C   GLY   101      56.609  16.052  -7.351  1.00 52.91      H21B C
ATOM   8372  O   GLY   101      57.785  15.688  -7.281  1.00 52.82      H21B O
ATOM   8373  N   MET   102      56.099  16.640  -8.427  1.00 50.64      H21B N
ATOM   8374  CA  MET   102      56.917  16.931  -9.603  1.00 49.55      H21B C
ATOM   8375  CB  MET   102      57.841  18.118  -9.334  1.00 45.02      H21B C
ATOM   8376  CG  MET   102      57.128  19.441  -9.291  1.00 40.44      H21B C
ATOM   8377  SD  MET   102      57.934  20.655  -8.250  1.00 32.66      H21B S
ATOM   8378  CE  MET   102      57.347  22.083  -8.992  1.00 41.41      H21B C
ATOM   8379  C   MET   102      57.756  15.726  -9.985  1.00 50.20      H21B C
ATOM   8380  O   MET   102      58.982  15.751  -9.873  1.00 50.67      H21B O
ATOM   8381  N   ASP   103      57.084  14.672 -10.433  1.00 49.62      H21B N
ATOM   8382  CA  ASP   103      57.756  13.426 -10.757  1.00 47.87      H21B C
ATOM   8383  CB  ASP   103      56.997  12.238 -10.138  1.00 49.38      H21B C
ATOM   8384  CG  ASP   103      55.590  12.042 -10.729  1.00 50.48      H21B C
ATOM   8385  OD1 ASP   103      55.088  12.937 -11.449  1.00 49.77      H21B O
ATOM   8386  OD2 ASP   103      54.986  10.978 -10.469  1.00 49.50      H21B O
ATOM   8387  C   ASP   103      57.890  13.258 -12.272  1.00 45.83      H21B C
ATOM   8388  O   ASP   103      58.508  12.306 -12.745  1.00 44.29      H21B O
ATOM   8389  N   VAL   104      57.314  14.187 -13.029  1.00 42.93      H21B N
ATOM   8390  CA  VAL   104      57.535  14.224 -14.471  1.00 42.13      H21B C
ATOM   8391  CB  VAL   104      56.421  13.493 -15.264  1.00 42.15      H21B C
ATOM   8392  CG1 VAL   104      56.696  13.618 -16.763  1.00 38.31      H21B C
ATOM   8393  CG2 VAL   104      56.334  12.035 -14.846  1.00 39.07      H21B C
ATOM   8394  C   VAL   104      57.539  15.659 -14.941  1.00 41.93      H21B C
ATOM   8395  O   VAL   104      56.611  16.399 -14.645  1.00 43.60      H21B O
ATOM   8396  N   TRP   105      58.562  16.053 -15.692  1.00 41.64      H21B N
ATOM   8397  CA  TRP   105      58.631  17.418 -16.202  1.00 41.31      H21B C
ATOM   8398  CB  TRP   105      59.989  18.032 -15.860  1.00 37.08      H21B C
ATOM   8399  CG  TRP   105      60.236  18.127 -14.398  1.00 32.86      H21B C
ATOM   8400  CD2 TRP   105      60.423  19.323 -13.638  1.00 30.58      H21B C
ATOM   8401  CE2 TRP   105      60.619  18.936 -12.293  1.00 31.25      H21B C
ATOM   8402  CE3 TRP   105      60.449  20.685 -13.960  1.00 29.62      H21B C
ATOM   8403  CD1 TRP   105      60.327  17.087 -13.508  1.00 32.58      H21B C
ATOM   8404  NE1 TRP   105      60.557  17.566 -12.242  1.00 30.54      H21B N
ATOM   8405  CZ2 TRP   105      60.831  19.869 -11.268  1.00 28.75      H21B C
ATOM   8406  CZ3 TRP   105      60.663  21.619 -12.934  1.00 28.89      H21B C
ATOM   8407  CH2 TRP   105      60.849  21.203 -11.610  1.00 29.51      H21B C
ATOM   8408  C   TRP   105      58.393  17.515 -17.706  1.00 43.85      H21B C
ATOM   8409  O   TRP   105      58.790  16.633 -18.462  1.00 43.17      H21B O
ATOM   8410  N   GLY   106      57.749  18.599 -18.134  1.00 48.37      H21B N
ATOM   8411  CA  GLY   106      57.772  18.971 -19.539  1.00 54.07      H21B C
ATOM   8412  C   GLY   106      59.143  19.475 -19.961  1.00 58.35      H21B C
ATOM   8413  O   GLY   106      60.004  19.725 -19.114  1.00 58.59      H21B O
ATOM   8414  N   GLN   107      59.353  19.626 -21.266  1.00 62.46      H21B N
ATOM   8415  CA  GLN   107      60.664  20.000 -21.785  1.00 66.67      H21B C
ATOM   8416  CB  GLN   107      60.642  20.044 -23.311  1.00 71.29      H21B C
ATOM   8417  CG  GLN   107      59.401  19.460 -23.927  1.00 81.85      H21B C
ATOM   8418  CD  GLN   107      58.376  20.516 -24.264  1.00 87.17      H21B C
ATOM   8419  OE1 GLN   107      58.653  21.711 -24.192  1.00 91.77      H21B O
ATOM   8420  NE2 GLN   107      57.180  20.082 -24.639  1.00 91.59      H21B N
ATOM   8421  C   GLN   107      61.091  21.363 -21.256  1.00 66.02      H21B C
ATOM   8422  O   GLN   107      62.263  21.604 -20.971  1.00 65.68      H21B O
ATOM   8423  N   GLY   108      60.117  22.251 -21.121  1.00 65.26      H21B N
ATOM   8424  CA  GLY   108      60.402  23.622 -20.760  1.00 61.19      H21B C
ATOM   8425  C   GLY   108      59.968  24.539 -21.879  1.00 58.99      H21B C
ATOM   8426  O   GLY   108      59.909  24.135 -23.038  1.00 55.89      H21B O
ATOM   8427  N   THR   109      59.638  25.775 -21.534  1.00 59.00      H21B N
ATOM   8428  CA  THR   109      59.567  26.817 -22.540  1.00 59.69      H21B C
ATOM   8429  CB  THR   109      58.099  27.114 -22.949  1.00 59.41      H21B C
ATOM   8430  OG1 THR   109      57.978  28.493 -23.313  1.00 59.56      H21B O
ATOM   8431  CG2 THR   109      57.140  26.775 -21.832  1.00 58.39      H21B C
ATOM   8432  C   THR   109      60.267  28.078 -22.067  1.00 57.64      H21B C
ATOM   8433  O   THR   109      60.179  28.452 -20.903  1.00 57.85      H21B O
ATOM   8434  N   THR   110      61.002  28.703 -22.977  1.00 56.06      H21B N
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ATOM   8435  CA  THR   110      61.757  29.905 -22.648  1.00 53.48      H21B C
ATOM   8436  CB  THR   110      63.106  29.974 -23.417  1.00 52.52      H21B C
ATOM   8437  OG1 THR   110      62.861  30.153 -24.814  1.00 51.93      H21B O
ATOM   8438  CG2 THR   110      63.896  28.701 -23.226  1.00 51.81      H21B C
ATOM   8439  C   THR   110      60.929  31.117 -23.025  1.00 51.15      H21B C
ATOM   8440  O   THR   110      60.340  31.170 -24.098  1.00 49.63      H21B O
ATOM   8441  N   VAL   111      60.883  32.086 -22.130  1.00 50.86      H21B N
ATOM   8442  CA  VAL   111      60.165  33.318 -22.382  1.00 53.09      H21B C
ATOM   8443  CB  VAL   111      59.024  33.498 -21.381  1.00 53.31      H21B C
ATOM   8444  CG1 VAL   111      58.293  34.802 -21.651  1.00 52.94      H21B C
ATOM   8445  CG2 VAL   111      58.086  32.321 -21.466  1.00 51.89      H21B C
ATOM   8446  C   VAL   111      61.127  34.481 -22.230  1.00 54.49      H21B C
ATOM   8447  O   VAL   111      61.634  34.722 -21.139  1.00 54.27      H21B O
ATOM   8448  N   THR   112      61.372  35.203 -23.320  1.00 56.71      H21B N
ATOM   8449  CA  THR   112      62.345  36.289 -23.315  1.00 59.52      H21B C
ATOM   8450  CB  THR   112      63.131  36.334 -24.627  1.00 60.00      H21B C
ATOM   8451  OG1 THR   112      63.445  35.001 -25.044  1.00 60.97      H21B O
ATOM   8452  CG2 THR   112      64.422  37.103 -24.437  1.00 59.68      H21B C
ATOM   8453  C   THR   112      61.640  37.622 -23.164  1.00 61.20      H21B C
ATOM   8454  O   THR   112      60.806  37.975 -23.981  1.00 62.07      H21B O
ATOM   8455  N   VAL   113      61.979  38.368 -22.123  1.00 63.91      H21B N
ATOM   8456  CA  VAL   113      61.405  39.692 -21.939  1.00 65.56      H21B C
ATOM   8457  CB  VAL   113      60.719  39.822 -20.578  1.00 65.05      H21B C
ATOM   8458  CG1 VAL   113      60.127  41.202 -20.438  1.00 63.91      H21B C
ATOM   8459  CG2 VAL   113      59.654  38.771 -20.434  1.00 64.43      H21B C
ATOM   8460  C   VAL   113      62.457  40.794 -22.039  1.00 67.13      H21B C
ATOM   8461  O   VAL   113      63.230  41.015 -21.106  1.00 68.10      H21B O
ATOM   8462  N   SER   114      62.468  41.492 -23.172  1.00 68.21      H21B N
ATOM   8463  CA  SER   114      63.407  42.588 -23.403  1.00 68.04      H21B C
ATOM   8464  CB  SER   114      64.642  42.068 -24.137  1.00 67.93      H21B C
ATOM   8465  OG  SER   114      65.609  43.086 -24.290  1.00 68.98      H21B O
ATOM   8466  C   SER   114      62.795  43.725 -24.219  1.00 68.45      H21B C
ATOM   8467  O   SER   114      61.954  43.509 -25.090  1.00 67.57      H21B O
ATOM   8468  N   SER   115      63.229  44.945 -23.938  1.00 69.36      H21B N
ATOM   8469  CA  SER   115      63.224  45.975 -24.961  1.00 69.76      H21B C
ATOM   8470  CB  SER   115      63.221  47.352 -24.320  1.00 70.24      H21B C
ATOM   8471  OG  SER   115      62.095  47.490 -23.474  1.00 72.93      H21B O
ATOM   8472  C   SER   115      64.512  45.746 -25.731  1.00 69.56      H21B C
ATOM   8473  O   SER   115      64.797  44.616 -26.131  1.00 71.87      H21B O
ATOM   8474  N   ALA   116      65.296  46.793 -25.933  1.00 67.88      H21B N
ATOM   8475  CA  ALA   116      66.653  46.616 -26.425  1.00 66.75      H21B C
ATOM   8476  CB  ALA   116      67.319  45.449 -25.711  1.00 67.94      H21B C
ATOM   8477  C   ALA   116      66.718  46.398 -27.925  1.00 66.13      H21B C
ATOM   8478  O   ALA   116      66.907  45.274 -28.387  1.00 65.19      H21B O
ATOM   8479  N   SER   117      66.569  47.484 -28.679  1.00 65.90      H21B N
ATOM   8480  CA  SER   117      66.897  47.492 -30.100  1.00 64.00      H21B C
ATOM   8481  CB  SER   117      66.318  48.732 -30.787  1.00 64.23      H21B C
ATOM   8482  OG  SER   117      66.935  48.950 -32.050  1.00 63.88      H21B O
ATOM   8483  C   SER   117      68.403  47.524 -30.222  1.00 62.28      H21B C
ATOM   8484  O   SER   117      69.087  48.047 -29.347  1.00 62.29      H21B O
ATOM   8485  N   THR   118      68.910  46.974 -31.316  1.00 60.02      H21B N
ATOM   8486  CA  THR   118      70.340  46.961 -31.579  1.00 58.31      H21B C
ATOM   8487  CB  THR   118      70.612  46.584 -33.050  1.00 58.63      H21B C
ATOM   8488  OG1 THR   118      71.785  47.270 -33.508  1.00 59.03      H21B O
ATOM   8489  CG2 THR   118      69.411  46.933 -33.926  1.00 55.99      H21B C
ATOM   8490  C   THR   118      71.048  48.280 -31.262  1.00 56.38      H21B C
ATOM   8491  O   THR   118      70.704  49.334 -31.794  1.00 57.50      H21B O
ATOM   8492  N   LYS   119      72.034  48.206 -30.376  1.00 53.48      H21B N
ATOM   8493  CA  LYS   119      72.906  49.337 -30.091  1.00 49.19      H21B C
ATOM   8494  CB  LYS   119      72.642  49.885 -28.693  1.00 47.24      H21B C
ATOM   8495  CG  LYS   119      73.647  50.952 -28.288  1.00 48.71      H21B C
ATOM   8496  CD  LYS   119      73.521  51.380 -26.829  1.00 47.72      H21B C
ATOM   8497  CE  LYS   119      74.717  52.241 -26.443  1.00 47.92      H21B C
ATOM   8498  NZ  LYS   119      75.119  52.084 -25.016  1.00 50.67      H21B N
ATOM   8499  C   LYS   119      74.375  48.922 -30.200  1.00 47.21      H21B C
ATOM   8500  O   LYS   119      74.735  47.761 -29.963  1.00 45.25      H21B O
ATOM   8501  N   GLY   120      75.220  49.879 -30.570  1.00 44.35      H21B N
ATOM   8502  CA  GLY   120      76.646  49.612 -30.652  1.00 40.92      H21B C
ATOM   8503  C   GLY   120      77.327  49.892 -29.326  1.00 38.58      H21B C
ATOM   8504  O   GLY   120      76.802  50.621 -28.474  1.00 36.46      H21B O
ATOM   8505  N   PRO   121      78.506  49.310 -29.114  1.00 36.94      H21B N
ATOM   8506  CD  PRO   121      79.208  48.416 -30.042  1.00 35.27      H21B C
ATOM   8507  CA  PRO   121      79.171  49.390 -27.813  1.00 36.50      H21B C
ATOM   8508  CB  PRO   121      80.132  48.220 -27.839  1.00 34.63      H21B C
ATOM   8509  CG  PRO   121      80.452  48.077 -29.285  1.00 36.69      H21B C
ATOM   8510  C   PRO   121      79.893  50.716 -27.558  1.00 37.73      H21B C
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ATOM   8511  O   PRO  121      80.301  51.421 -28.487  1.00 35.85      H21B O
ATOM   8512  N   SER  122      80.049  51.047 -26.284  1.00 37.92      H21B N
ATOM   8513  CA  SER  122      81.072  51.998 -25.896  1.00 38.88      H21B C
ATOM   8514  CB  SER  122      80.612  52.828 -24.689  1.00 39.55      H21B C
ATOM   8515  OG  SER  122      79.510  53.676 -25.028  1.00 41.26      H21B O
ATOM   8516  C   SER  122      82.326  51.205 -25.552  1.00 38.81      H21B C
ATOM   8517  O   SER  122      82.277  50.222 -24.805  1.00 39.06      H21B O
ATOM   8518  N   VAL  123      83.451  51.617 -26.114  1.00 37.51      H21B N
ATOM   8519  CA  VAL  123      84.702  50.973 -25.770  1.00 36.15      H21B C
ATOM   8520  CB  VAL  123      85.525  50.643 -27.024  1.00 34.75      H21B C
ATOM   8521  CG1 VAL  123      86.827  49.988 -26.615  1.00 32.49      H21B C
ATOM   8522  CG2 VAL  123      84.713  49.721 -27.955  1.00 31.95      H21B C
ATOM   8523  C   VAL  123      85.529  51.854 -24.851  1.00 35.96      H21B C
ATOM   8524  O   VAL  123      85.920  52.952 -25.230  1.00 37.71      H21B O
ATOM   8525  N   PHE  124      85.776  51.362 -23.639  1.00 34.63      H21B N
ATOM   8526  CA  PHE  124      86.671  52.014 -22.688  1.00 33.18      H21B C
ATOM   8527  CB  PHE  124      86.008  52.139 -21.319  1.00 29.98      H21B C
ATOM   8528  CG  PHE  124      84.785  53.005 -21.322  1.00 30.01      H21B C
ATOM   8529  CD1 PHE  124      84.885  54.368 -21.582  1.00 30.04      H21B C
ATOM   8530  CD2 PHE  124      83.534  52.471 -21.043  1.00 28.86      H21B C
ATOM   8531  CE1 PHE  124      83.757  55.186 -21.560  1.00 28.02      H21B C
ATOM   8532  CE2 PHE  124      82.411  53.279 -21.022  1.00 27.96      H21B C
ATOM   8533  CZ  PHE  124      82.526  54.639 -21.279  1.00 28.14      H21B C
ATOM   8534  C   PHE  124      87.966  51.242 -22.531  1.00 33.73      H21B C
ATOM   8535  O   PHE  124      87.992  50.015 -22.596  1.00 34.72      H21B O
ATOM   8536  N   PRO  125      89.069  51.960 -22.314  1.00 35.69      H21B N
ATOM   8537  CD  PRO  125      89.202  53.424 -22.358  1.00 34.56      H21B C
ATOM   8538  CA  PRO  125      90.351  51.311 -22.040  1.00 36.09      H21B C
ATOM   8539  CB  PRO  125      91.357  52.406 -22.339  1.00 34.77      H21B C
ATOM   8540  CG  PRO  125      90.632  53.632 -21.941  1.00 34.99      H21B C
ATOM   8541  C   PRO  125      90.474  50.812 -20.598  1.00 36.79      H21B C
ATOM   8542  O   PRO  125      90.186  51.553 -19.645  1.00 36.75      H21B O
ATOM   8543  N   LEU  126      90.911  49.565 -20.449  1.00 35.96      H21B N
ATOM   8544  CA  LEU  126      91.369  49.067 -19.155  1.00 38.37      H21B C
ATOM   8545  CB  LEU  126      90.912  47.623 -18.959  1.00 36.93      H21B C
ATOM   8546  CG  LEU  126      89.403  47.434 -19.047  1.00 32.95      H21B C
ATOM   8547  CD1 LEU  126      89.058  46.042 -18.690  1.00 30.64      H21B C
ATOM   8548  CD2 LEU  126      88.714  48.406 -18.114  1.00 33.63      H21B C
ATOM   8549  C   LEU  126      92.897  49.153 -18.994  1.00 41.03      H21B C
ATOM   8550  O   LEU  126      93.620  48.185 -19.232  1.00 40.02      H21B O
ATOM   8551  N   ALA  127      93.367  50.322 -18.568  1.00 44.45      H21B N
ATOM   8552  CA  ALA  127      94.789  50.605 -18.423  1.00 48.51      H21B C
ATOM   8553  CB  ALA  127      94.968  52.014 -17.860  1.00 46.45      H21B C
ATOM   8554  C   ALA  127      95.527  49.596 -17.546  1.00 51.79      H21B C
ATOM   8555  O   ALA  127      94.996  49.107 -16.552  1.00 50.48      H21B O
ATOM   8556  N   PRO  128      96.778  49.295 -17.902  1.00 55.84      H21B N
ATOM   8557  CD  PRO  128      97.532  49.968 -18.971  1.00 58.16      H21B C
ATOM   8558  CA  PRO  128      97.578  48.269 -17.232  1.00 61.96      H21B C
ATOM   8559  CB  PRO  128      98.792  48.112 -18.141  1.00 61.86      H21B C
ATOM   8560  CG  PRO  128      98.925  49.434 -18.799  1.00 59.88      H21B C
ATOM   8561  C   PRO  128      97.966  48.684 -15.818  1.00 66.51      H21B C
ATOM   8562  O   PRO  128      98.194  49.867 -15.551  1.00 67.81      H21B O
ATOM   8563  N   SER  129      98.041  47.697 -14.926  1.00 71.65      H21B N
ATOM   8564  CA  SER  129      98.268  47.930 -13.496  1.00 76.44      H21B C
ATOM   8565  CB  SER  129      98.539  46.594 -12.778  1.00 76.87      H21B C
ATOM   8566  OG  SER  129      97.610  45.589 -13.171  1.00 74.76      H21B O
ATOM   8567  C   SER  129      99.444  48.875 -13.269  1.00 80.19      H21B C
ATOM   8568  O   SER  129     100.343  48.974 -14.109  1.00 81.78      H21B O
ATOM   8569  N   GLY  135     104.091  39.639 -12.189  1.00119.83      H21B N
ATOM   8570  CA  GLY  135     105.514  39.440 -12.396  1.00119.78      H21B C
ATOM   8571  C   GLY  135     106.108  40.387 -13.424  1.00119.10      H21B C
ATOM   8572  O   GLY  135     106.017  41.611 -13.283  1.00120.34      H21B O
ATOM   8573  N   GLY  136     106.728  39.823 -14.458  1.00116.59      H21B N
ATOM   8574  CA  GLY  136     107.222  40.634 -15.557  1.00111.70      H21B C
ATOM   8575  C   GLY  136     106.106  40.963 -16.526  1.00107.95      H21B C
ATOM   8576  O   GLY  136     106.272  41.764 -17.444  1.00108.38      H21B O
ATOM   8577  N   THR  137     104.957  40.334 -16.313  1.00103.31      H21B N
ATOM   8578  CA  THR  137     103.792  40.520 -17.166  1.00 97.68      H21B C
ATOM   8579  CB  THR  137     103.096  39.171 -17.453  1.00 98.99      H21B C
ATOM   8580  OG1 THR  137     102.819  38.504 -16.215  1.00100.61      H21B O
ATOM   8581  CG2 THR  137     103.979  38.281 -18.314  1.00 99.84      H21B C
ATOM   8582  C   THR  137     102.783  41.458 -16.512  1.00 92.44      H21B C
ATOM   8583  O   THR  137     102.556  41.394 -15.303  1.00 91.69      H21B O
ATOM   8584  N   ALA  138     102.188  42.335 -17.316  1.00 86.07      H21B N
ATOM   8585  CA  ALA  138     101.075  43.159 -16.861  1.00 79.49      H21B C
ATOM   8586  CB  ALA  138     101.440  44.631 -16.949  1.00 79.63      H21B C
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ATOM   8587  C   ALA   138      99.834  42.871 -17.704  1.00 74.95      H21B C
ATOM   8588  O   ALA   138      99.937  42.528 -18.884  1.00 73.87      H21B O
ATOM   8589  N   ALA   139      98.663  43.000 -17.087  1.00 68.95      H21B N
ATOM   8590  CA  ALA   139      97.404  42.783 -17.784  1.00 63.72      H21B C
ATOM   8591  CB  ALA   139      96.487  41.900 -16.944  1.00 63.98      H21B C
ATOM   8592  C   ALA   139      96.716  44.116 -18.104  1.00 60.62      H21B C
ATOM   8593  O   ALA   139      96.707  45.045 -17.289  1.00 59.40      H21B O
ATOM   8594  N   LEU   140      96.154  44.197 -19.306  1.00 55.59      H21B N
ATOM   8595  CA  LEU   140      95.516  45.408 -19.795  1.00 51.29      H21B C
ATOM   8596  CB  LEU   140      96.535  46.309 -20.494  1.00 50.60      H21B C
ATOM   8597  CG  LEU   140      97.142  45.763 -21.799  1.00 50.41      H21B C
ATOM   8598  CD1 LEU   140      96.234  46.074 -22.988  1.00 49.55      H21B C
ATOM   8599  CD2 LEU   140      98.506  46.382 -22.014  1.00 49.82      H21B C
ATOM   8600  C   LEU   140      94.501  44.927 -20.803  1.00 49.58      H21B C
ATOM   8601  O   LEU   140      94.544  43.765 -21.210  1.00 48.85      H21B O
ATOM   8602  N   GLY   141      93.600  45.809 -21.219  1.00 47.47      H21B N
ATOM   8603  CA  GLY   141      92.610  45.412 -22.201  1.00 47.38      H21B C
ATOM   8604  C   GLY   141      91.581  46.490 -22.427  1.00 47.35      H21B C
ATOM   8605  O   GLY   141      91.850  47.658 -22.143  1.00 47.11      H21B O
ATOM   8606  N   CYS   142      90.406  46.127 -22.931  1.00 47.21      H21B N
ATOM   8607  CA  CYS   142      89.360  47.128 -23.024  1.00 47.00      H21B C
ATOM   8608  C   CYS   142      87.936  46.620 -22.781  1.00 43.01      H21B C
ATOM   8609  O   CYS   142      87.595  45.495 -23.137  1.00 42.06      H21B O
ATOM   8610  CB  CYS   142      89.459  47.844 -24.371  1.00 50.45      H21B C
ATOM   8611  SG  CYS   142      88.981  46.864 -25.834  1.00 59.47      H21B S
ATOM   8612  N   LEU   143      87.119  47.474 -22.161  1.00 38.35      H21B N
ATOM   8613  CA  LEU   143      85.750  47.140 -21.766  1.00 34.87      H21B C
ATOM   8614  CB  LEU   143      85.345  47.929 -20.513  1.00 35.86      H21B C
ATOM   8615  CG  LEU   143      83.870  47.892 -20.078  1.00 33.46      H21B C
ATOM   8616  CD1 LEU   143      83.550  46.536 -19.524  1.00 32.08      H21B C
ATOM   8617  CD2 LEU   143      83.602  48.964 -19.035  1.00 31.98      H21B C
ATOM   8618  C   LEU   143      84.787  47.485 -22.886  1.00 34.34      H21B C
ATOM   8619  O   LEU   143      84.717  48.643 -23.302  1.00 31.63      H21B O
ATOM   8620  N   VAL   144      84.047  46.488 -23.372  1.00 34.47      H21B N
ATOM   8621  CA  VAL   144      83.069  46.720 -24.419  1.00 35.66      H21B C
ATOM   8622  CB  VAL   144      83.162  45.660 -25.533  1.00 34.46      H21B C
ATOM   8623  CG1 VAL   144      82.203  46.022 -26.664  1.00 35.75      H21B C
ATOM   8624  CG2 VAL   144      84.594  45.556 -26.042  1.00 33.25      H21B C
ATOM   8625  C   VAL   144      81.683  46.690 -23.783  1.00 38.56      H21B C
ATOM   8626  O   VAL   144      81.134  45.630 -23.460  1.00 38.50      H21B O
ATOM   8627  N   LYS   145      81.120  47.879 -23.620  1.00 38.89      H21B N
ATOM   8628  CA  LYS   145      79.997  48.085 -22.734  1.00 39.76      H21B C
ATOM   8629  CB  LYS   145      80.342  49.261 -21.801  1.00 41.45      H21B C
ATOM   8630  CG  LYS   145      79.385  49.497 -20.642  1.00 41.62      H21B C
ATOM   8631  CD  LYS   145      80.143  49.965 -19.415  1.00 44.51      H21B C
ATOM   8632  CE  LYS   145      79.965  51.461 -19.152  1.00 47.71      H21B C
ATOM   8633  NZ  LYS   145      78.551  51.812 -18.786  1.00 52.84      H21B N
ATOM   8634  C   LYS   145      78.725  48.367 -23.548  1.00 40.29      H21B C
ATOM   8635  O   LYS   145      78.764  49.101 -24.546  1.00 37.61      H21B O
ATOM   8636  N   ASP   146      77.620  47.746 -23.124  1.00 41.41      H21B N
ATOM   8637  CA  ASP   146      76.255  48.156 -23.480  1.00 42.07      H21B C
ATOM   8638  CB  ASP   146      75.997  49.578 -23.000  1.00 44.43      H21B C
ATOM   8639  CG  ASP   146      75.619  49.625 -21.539  1.00 49.82      H21B C
ATOM   8640  OD1 ASP   146      75.227  48.554 -21.020  1.00 49.91      H21B O
ATOM   8641  OD2 ASP   146      75.708  50.715 -20.915  1.00 52.78      H21B O
ATOM   8642  C   ASP   146      75.812  48.059 -24.933  1.00 40.90      H21B C
ATOM   8643  O   ASP   146      75.271  49.021 -25.475  1.00 40.19      H21B O
ATOM   8644  N   TYR   147      76.012  46.895 -25.545  1.00 39.23      H21B N
ATOM   8645  CA  TYR   147      75.641  46.677 -26.939  1.00 40.02      H21B C
ATOM   8646  CB  TYR   147      76.847  46.185 -27.733  1.00 38.54      H21B C
ATOM   8647  CG  TYR   147      77.413  44.872 -27.241  1.00 38.05      H21B C
ATOM   8648  CD1 TYR   147      77.005  43.660 -27.799  1.00 36.64      H21B C
ATOM   8649  CE1 TYR   147      77.585  42.457 -27.406  1.00 35.87      H21B C
ATOM   8650  CD2 TYR   147      78.408  44.842 -26.261  1.00 37.18      H21B C
ATOM   8651  CE2 TYR   147      78.989  43.646 -25.863  1.00 36.14      H21B C
ATOM   8652  CZ  TYR   147      78.583  42.458 -26.445  1.00 35.73      H21B C
ATOM   8653  OH  TYR   147      79.240  41.290 -26.130  1.00 33.54      H21B O
ATOM   8654  C   TYR   147      74.501  45.662 -27.090  1.00 41.03      H21B C
ATOM   8655  O   TYR   147      74.063  45.055 -26.121  1.00 39.81      H21B O
ATOM   8656  N   PHE   148      74.038  45.476 -28.321  1.00 42.76      H21B N
ATOM   8657  CA  PHE   148      72.928  44.579 -28.589  1.00 44.38      H21B C
ATOM   8658  CB  PHE   148      71.654  45.101 -27.916  1.00 47.16      H21B C
ATOM   8659  CG  PHE   148      70.495  44.148 -28.013  1.00 51.60      H21B C
ATOM   8660  CD1 PHE   148      69.885  43.904 -29.231  1.00 52.66      H21B C
ATOM   8661  CD2 PHE   148      70.046  43.464 -26.893  1.00 53.38      H21B C
ATOM   8662  CE1 PHE   148      68.861  43.002 -29.336  1.00 53.99      H21B C
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ATOM   8663  CE2 PHE   148      69.021  42.561 -26.992  1.00 54.37      H21B C
ATOM   8664  CZ  PHE   148      68.426  42.329 -28.218  1.00 55.54      H21B C
ATOM   8665  C   PHE   148      72.690  44.474 -30.087  1.00 43.47      H21B C
ATOM   8666  O   PHE   148      72.795  45.454 -30.809  1.00 43.90      H21B O
ATOM   8667  N   PRO   149      72.363  43.279 -30.577  1.00 43.17      H21B N
ATOM   8668  CD  PRO   149      71.924  43.094 -31.969  1.00 43.32      H21B C
ATOM   8669  CA  PRO   149      72.424  42.006 -29.863  1.00 44.42      H21B C
ATOM   8670  CB  PRO   149      71.744  41.033 -30.818  1.00 42.48      H21B C
ATOM   8671  CG  PRO   149      72.009  41.596 -32.152  1.00 41.77      H21B C
ATOM   8672  C   PRO   149      73.874  41.627 -29.635  1.00 44.50      H21B C
ATOM   8673  O   PRO   149      74.748  42.479 -29.653  1.00 46.03      H21B O
ATOM   8674  N   GLU   150      74.116  40.342 -29.413  1.00 44.54      H21B N
ATOM   8675  CA  GLU   150      75.421  39.764 -29.666  1.00 45.89      H21B C
ATOM   8676  CB  GLU   150      75.544  38.405 -28.977  1.00 46.98      H21B C
ATOM   8677  CG  GLU   150      75.465  38.451 -27.465  1.00 48.70      H21B C
ATOM   8678  CD  GLU   150      76.823  38.263 -26.821  1.00 49.44      H21B C
ATOM   8679  OE1 GLU   150      77.643  39.205 -26.905  1.00 48.89      H21B O
ATOM   8680  OE2 GLU   150      77.073  37.178 -26.241  1.00 48.71      H21B O
ATOM   8681  C   GLU   150      75.507  39.577 -31.172  1.00 44.93      H21B C
ATOM   8682  O   GLU   150      74.527  39.787 -31.886  1.00 45.62      H21B O
ATOM   8683  N   PRO   151      76.680  39.188 -31.676  1.00 42.42      H21B N
ATOM   8684  CD  PRO   151      76.847  38.646 -33.034  1.00 40.81      H21B C
ATOM   8685  CA  PRO   151      77.943  39.164 -30.940  1.00 42.36      H21B C
ATOM   8686  CB  PRO   151      78.688  38.010 -31.588  1.00 40.92      H21B C
ATOM   8687  CG  PRO   151      78.279  38.116 -33.025  1.00 39.66      H21B C
ATOM   8688  C   PRO   151      78.701  40.488 -31.104  1.00 42.20      H21B C
ATOM   8689  O   PRO   151      78.303  41.359 -31.874  1.00 43.34      H21B O
ATOM   8690  N   VAL   152      79.796  40.624 -30.374  1.00 40.37      H21B N
ATOM   8691  CA  VAL   152      80.856  41.531 -30.763  1.00 39.57      H21B C
ATOM   8692  CB  VAL   152      81.098  42.617 -29.689  1.00 39.88      H21B C
ATOM   8693  CG1 VAL   152      79.869  43.496 -29.558  1.00 40.66      H21B C
ATOM   8694  CG2 VAL   152      81.432  41.967 -28.355  1.00 38.69      H21B C
ATOM   8695  C   VAL   152      82.112  40.689 -30.924  1.00 40.03      H21B C
ATOM   8696  O   VAL   152      82.258  39.655 -30.288  1.00 38.78      H21B O
ATOM   8697  N   THR   153      83.018  41.120 -31.780  1.00 40.25      H21B N
ATOM   8698  CA  THR   153      84.279  40.431 -31.900  1.00 42.37      H21B C
ATOM   8699  CB  THR   153      84.458  39.941 -33.336  1.00 44.70      H21B C
ATOM   8700  OG1 THR   153      84.342  41.054 -34.231  1.00 49.27      H21B O
ATOM   8701  CG2 THR   153      83.372  38.916 -33.683  1.00 46.36      H21B C
ATOM   8702  C   THR   153      85.399  41.392 -31.504  1.00 43.32      H21B C
ATOM   8703  O   THR   153      85.273  42.599 -31.688  1.00 44.64      H21B O
ATOM   8704  N   VAL   154      86.485  40.871 -30.941  1.00 43.33      H21B N
ATOM   8705  CA  VAL   154      87.588  41.733 -30.518  1.00 42.48      H21B C
ATOM   8706  CB  VAL   154      87.654  41.842 -28.985  1.00 40.02      H21B C
ATOM   8707  CG1 VAL   154      88.723  42.809 -28.587  1.00 39.30      H21B C
ATOM   8708  CG2 VAL   154      86.336  42.294 -28.452  1.00 39.07      H21B C
ATOM   8709  C   VAL   154      88.944  41.253 -31.038  1.00 44.23      H21B C
ATOM   8710  O   VAL   154      89.225  40.061 -31.084  1.00 45.14      H21B O
ATOM   8711  N   SER   155      89.779  42.199 -31.436  1.00 46.16      H21B N
ATOM   8712  CA  SER   155      91.058  41.898 -32.053  1.00 49.14      H21B C
ATOM   8713  CB  SER   155      90.953  42.124 -33.568  1.00 50.30      H21B C
ATOM   8714  OG  SER   155      92.205  42.456 -34.151  1.00 52.89      H21B O
ATOM   8715  C   SER   155      92.100  42.830 -31.429  1.00 51.51      H21B C
ATOM   8716  O   SER   155      91.742  43.875 -30.870  1.00 52.21      H21B O
ATOM   8717  N   TRP   156      93.377  42.461 -31.508  1.00 51.65      H21B N
ATOM   8718  CA  TRP   156      94.425  43.269 -30.892  1.00 53.25      H21B C
ATOM   8719  CB  TRP   156      94.963  42.580 -29.636  1.00 51.30      H21B C
ATOM   8720  CG  TRP   156      94.025  42.624 -28.473  1.00 48.72      H21B C
ATOM   8721  CD2 TRP   156      93.881  43.691 -27.533  1.00 46.26      H21B C
ATOM   8722  CE2 TRP   156      92.913  43.291 -26.592  1.00 45.15      H21B C
ATOM   8723  CE3 TRP   156      94.477  44.943 -27.396  1.00 43.80      H21B C
ATOM   8724  CD1 TRP   156      93.157  41.645 -28.077  1.00 47.86      H21B C
ATOM   8725  NE1 TRP   156      92.486  42.039 -26.945  1.00 45.30      H21B N
ATOM   8726  CZ2 TRP   156      92.529  44.102 -25.526  1.00 44.56      H21B C
ATOM   8727  CZ3 TRP   156      94.097  45.745 -26.340  1.00 43.81      H21B C
ATOM   8728  CH2 TRP   156      93.129  45.323 -25.416  1.00 42.87      H21B C
ATOM   8729  C   TRP   156      95.583  43.578 -31.828  1.00 56.08      H21B C
ATOM   8730  O   TRP   156      96.211  42.682 -32.388  1.00 55.96      H21B O
ATOM   8731  N   ASN   157      95.878  44.861 -31.977  1.00 60.61      H21B N
ATOM   8732  CA  ASN   157      96.870  45.289 -32.952  1.00 64.41      H21B C
ATOM   8733  CB  ASN   157      98.284  44.890 -32.479  1.00 65.66      H21B C
ATOM   8734  CG  ASN   157      98.725  45.647 -31.206  1.00 66.78      H21B C
ATOM   8735  OD1 ASN   157      98.165  46.697 -30.860  1.00 66.57      H21B O
ATOM   8736  ND2 ASN   157      99.731  45.110 -30.515  1.00 63.54      H21B N
ATOM   8737  C   ASN   157      96.515  44.625 -34.287  1.00 66.14      H21B C
ATOM   8738  O   ASN   157      97.389  44.180 -35.031  1.00 66.39      H21B O
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ATOM   8739  N   SER  158      95.211  44.546 -34.558  1.00 67.60      H21B N
ATOM   8740  CA  SER  158      94.688  44.092 -35.843  1.00 68.35      H21B C
ATOM   8741  CB  SER  158      95.198  44.984 -36.968  1.00 68.48      H21B C
ATOM   8742  OG  SER  158      94.876  46.343 -36.726  1.00 69.06      H21B O
ATOM   8743  C   SER  158      95.052  42.655 -36.141  1.00 69.01      H21B C
ATOM   8744  O   SER  158      94.963  42.206 -37.282  1.00 69.30      H21B O
ATOM   8745  N   GLY  159      95.464  41.938 -35.103  1.00 69.36      H21B N
ATOM   8746  CA  GLY  159      95.792  40.535 -35.255  1.00 69.78      H21B C
ATOM   8747  C   GLY  159      97.208  40.233 -34.819  1.00 70.12      H21B C
ATOM   8748  O   GLY  159      97.498  39.142 -34.331  1.00 69.25      H21B O
ATOM   8749  N   ALA  160      98.093  41.208 -34.985  1.00 71.83      H21B N
ATOM   8750  CA  ALA  160      99.512  41.003 -34.717  1.00 73.36      H21B C
ATOM   8751  CB  ALA  160     100.271  42.319 -34.871  1.00 73.77      H21B C
ATOM   8752  C   ALA  160      99.731  40.430 -33.320  1.00 74.01      H21B C
ATOM   8753  O   ALA  160     100.796  39.892 -33.022  1.00 75.23      H21B O
ATOM   8754  N   LEU  161      98.716  40.545 -32.469  1.00 73.29      H21B N
ATOM   8755  CA  LEU  161      98.813  40.076 -31.093  1.00 71.19      H21B C
ATOM   8756  CB  LEU  161      98.713  41.266 -30.135  1.00 71.12      H21B C
ATOM   8757  CG  LEU  161      99.008  41.016 -28.659  1.00 70.62      H21B C
ATOM   8758  CD1 LEU  161     100.385  40.403 -28.515  1.00 72.48      H21B C
ATOM   8759  CD2 LEU  161      98.927  42.322 -27.897  1.00 69.65      H21B C
ATOM   8760  C   LEU  161      97.703  39.073 -30.793  1.00 70.20      H21B C
ATOM   8761  O   LEU  161      96.541  39.445 -30.655  1.00 69.33      H21B O
ATOM   8762  N   THR  162      98.063  37.798 -30.699  1.00 69.03      H21B N
ATOM   8763  CA  THR  162      97.090  36.767 -30.376  1.00 69.44      H21B C
ATOM   8764  CB  THR  162      97.079  35.661 -31.444  1.00 70.49      H21B C
ATOM   8765  OG1 THR  162      98.431  35.293 -31.752  1.00 72.93      H21B O
ATOM   8766  CG2 THR  162      96.367  36.127 -32.697  1.00 69.81      H21B C
ATOM   8767  C   THR  162      97.417  36.143 -29.024  1.00 69.37      H21B C
ATOM   8768  O   THR  162      96.528  35.857 -28.220  1.00 68.44      H21B O
ATOM   8769  N   SER  163      98.703  35.943 -28.773  1.00 68.77      H21B N
ATOM   8770  CA  SER  163      99.130  35.291 -27.550  1.00 68.52      H21B C
ATOM   8771  CB  SER  163     100.646  35.102 -27.577  1.00 68.30      H21B C
ATOM   8772  OG  SER  163     101.019  33.934 -26.874  1.00 69.26      H21B O
ATOM   8773  C   SER  163      98.720  36.107 -26.319  1.00 68.15      H21B C
ATOM   8774  O   SER  163      98.861  37.332 -26.300  1.00 69.61      H21B O
ATOM   8775  N   GLY  164      98.203  35.419 -25.300  1.00 66.79      H21B N
ATOM   8776  CA  GLY  164      97.882  36.063 -24.033  1.00 63.70      H21B C
ATOM   8777  C   GLY  164      96.541  36.773 -24.043  1.00 61.53      H21B C
ATOM   8778  O   GLY  164      96.106  37.351 -23.038  1.00 59.15      H21B O
ATOM   8779  N   VAL  165      95.891  36.733 -25.200  1.00 60.65      H21B N
ATOM   8780  CA  VAL  165      94.596  37.360 -25.381  1.00 61.21      H21B C
ATOM   8781  CB  VAL  165      94.320  37.626 -26.867  1.00 60.77      H21B C
ATOM   8782  CG1 VAL  165      92.857  38.002 -27.064  1.00 61.36      H21B C
ATOM   8783  CG2 VAL  165      95.225  38.729 -27.365  1.00 61.58      H21B C
ATOM   8784  C   VAL  165      93.490  36.473 -24.842  1.00 61.45      H21B C
ATOM   8785  O   VAL  165      93.344  35.331 -25.271  1.00 62.50      H21B O
ATOM   8786  N   HIS  166      92.716  37.007 -23.903  1.00 61.14      H21B N
ATOM   8787  CA  HIS  166      91.531  36.329 -23.404  1.00 61.29      H21B C
ATOM   8788  CB  HIS  166      91.764  35.867 -21.964  1.00 65.46      H21B C
ATOM   8789  CG  HIS  166      91.226  34.498 -21.675  1.00 72.03      H21B C
ATOM   8790  CD2 HIS  166      91.738  33.267 -21.923  1.00 74.47      H21B C
ATOM   8791  ND1 HIS  166      90.012  34.289 -21.051  1.00 74.85      H21B N
ATOM   8792  CE1 HIS  166      89.800  32.990 -20.926  1.00 76.37      H21B C
ATOM   8793  NE2 HIS  166      90.832  32.347 -21.447  1.00 76.73      H21B N
ATOM   8794  C   HIS  166      90.306  37.248 -23.481  1.00 58.26      H21B C
ATOM   8795  O   HIS  166      90.182  38.217 -22.728  1.00 57.57      H21B O
ATOM   8796  N   THR  167      89.406  36.931 -24.404  1.00 54.96      H21B N
ATOM   8797  CA  THR  167      88.176  37.690 -24.574  1.00 52.16      H21B C
ATOM   8798  CB  THR  167      87.855  37.872 -26.068  1.00 52.06      H21B C
ATOM   8799  OG1 THR  167      89.000  38.412 -26.743  1.00 52.50      H21B O
ATOM   8800  CG2 THR  167      86.705  38.836 -26.241  1.00 50.49      H21B C
ATOM   8801  C   THR  167      86.994  36.988 -23.883  1.00 49.74      H21B C
ATOM   8802  O   THR  167      86.444  36.017 -24.396  1.00 49.74      H21B O
ATOM   8803  N   PHE  168      86.605  37.506 -22.722  1.00 46.79      H21B N
ATOM   8804  CA  PHE  168      85.631  36.862 -21.854  1.00 44.69      H21B C
ATOM   8805  CB  PHE  168      85.690  37.497 -20.469  1.00 42.76      H21B C
ATOM   8806  CG  PHE  168      86.901  37.114 -19.682  1.00 41.19      H21B C
ATOM   8807  CD1 PHE  168      88.035  37.895 -19.707  1.00 40.51      H21B C
ATOM   8808  CD2 PHE  168      86.896  35.976 -18.896  1.00 42.33      H21B C
ATOM   8809  CE1 PHE  168      89.141  37.551 -18.962  1.00 40.25      H21B C
ATOM   8810  CE2 PHE  168      88.003  35.625 -18.148  1.00 41.44      H21B C
ATOM   8811  CZ  PHE  168      89.122  36.411 -18.180  1.00 40.34      H21B C
ATOM   8812  C   PHE  168      84.199  36.929 -22.373  1.00 43.71      H21B C
ATOM   8813  O   PHE  168      83.829  37.859 -23.077  1.00 45.06      H21B O
ATOM   8814  N   PRO  169      83.367  35.942 -22.014  1.00 42.61      H21B N
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ATOM   8815  CD  PRO   169      83.682  34.799 -21.144  1.00 41.27      H21B C
ATOM   8816  CA  PRO   169      81.976  35.900 -22.477  1.00 42.04      H21B C
ATOM   8817  CB  PRO   169      81.472  34.548 -21.975  1.00 40.17      H21B C
ATOM   8818  CG  PRO   169      82.714  33.768 -21.619  1.00 39.86      H21B C
ATOM   8819  C   PRO   169      81.201  37.061 -21.867  1.00 41.81      H21B C
ATOM   8820  O   PRO   169      81.511  37.493 -20.757  1.00 40.70      H21B O
ATOM   8821  N   ALA   170      80.201  37.562 -22.587  1.00 41.85      H21B N
ATOM   8822  CA  ALA   170      79.512  38.785 -22.184  1.00 43.47      H21B C
ATOM   8823  CB  ALA   170      78.573  39.232 -23.285  1.00 42.59      H21B C
ATOM   8824  C   ALA   170      78.735  38.618 -20.879  1.00 45.43      H21B C
ATOM   8825  O   ALA   170      78.762  37.571 -20.255  1.00 46.51      H21B O
ATOM   8826  N   VAL   171      78.049  39.668 -20.465  1.00 47.55      H21B N
ATOM   8827  CA  VAL   171      77.162  39.592 -19.323  1.00 50.15      H21B C
ATOM   8828  CB  VAL   171      77.784  40.306 -18.077  1.00 49.03      H21B C
ATOM   8829  CG1 VAL   171      77.820  41.807 -18.287  1.00 46.37      H21B C
ATOM   8830  CG2 VAL   171      77.008  39.969 -16.817  1.00 47.04      H21B C
ATOM   8831  C   VAL   171      75.921  40.335 -19.788  1.00 54.76      H21B C
ATOM   8832  O   VAL   171      76.035  41.327 -20.502  1.00 54.18      H21B O
ATOM   8833  N   LEU   172      74.742  39.841 -19.423  1.00 60.45      H21B N
ATOM   8834  CA  LEU   172      73.507  40.542 -19.741  1.00 66.51      H21B C
ATOM   8835  CB  LEU   172      72.403  39.548 -20.094  1.00 69.05      H21B C
ATOM   8836  CG  LEU   172      72.171  39.445 -21.602  1.00 71.42      H21B C
ATOM   8837  CD1 LEU   172      71.366  38.195 -21.963  1.00 70.43      H21B C
ATOM   8838  CD2 LEU   172      71.459  40.714 -22.037  1.00 71.49      H21B C
ATOM   8839  C   LEU   172      73.088  41.398 -18.564  1.00 69.67      H21B C
ATOM   8840  O   LEU   172      73.104  40.942 -17.423  1.00 70.14      H21B O
ATOM   8841  N   GLN   173      72.719  42.640 -18.851  1.00 73.42      H21B N
ATOM   8842  CA  GLN   173      72.562  43.655 -17.823  1.00 77.15      H21B C
ATOM   8843  CB  GLN   173      72.867  45.038 -18.404  1.00 79.75      H21B C
ATOM   8844  CG  GLN   173      74.312  45.248 -18.827  1.00 83.55      H21B C
ATOM   8845  CD  GLN   173      75.172  45.782 -17.698  1.00 85.89      H21B C
ATOM   8846  OE1 GLN   173      74.729  45.856 -16.548  1.00 86.83      H21B O
ATOM   8847  NE2 GLN   173      76.410  46.159 -18.020  1.00 87.03      H21B N
ATOM   8848  C   GLN   173      71.166  43.671 -17.216  1.00 78.60      H21B C
ATOM   8849  O   GLN   173      70.259  42.965 -17.669  1.00 79.70      H21B O
ATOM   8850  N   SER   174      71.007  44.489 -16.181  1.00 79.33      H21B N
ATOM   8851  CA  SER   174      69.697  44.771 -15.607  1.00 79.53      H21B C
ATOM   8852  CB  SER   174      69.846  45.630 -14.344  1.00 81.67      H21B C
ATOM   8853  OG  SER   174      70.638  46.782 -14.601  1.00 84.74      H21B O
ATOM   8854  C   SER   174      68.839  45.509 -16.629  1.00 78.22      H21B C
ATOM   8855  O   SER   174      67.741  45.967 -16.306  1.00 77.64      H21B O
ATOM   8856  N   SER   175      69.352  45.623 -17.855  1.00 76.80      H21B N
ATOM   8857  CA  SER   175      68.678  46.367 -18.916  1.00 74.39      H21B C
ATOM   8858  CB  SER   175      69.153  47.826 -18.914  1.00 74.01      H21B C
ATOM   8859  OG  SER   175      70.555  47.916 -19.114  1.00 75.07      H21B O
ATOM   8860  C   SER   175      68.868  45.759 -20.311  1.00 72.21      H21B C
ATOM   8861  O   SER   175      69.097  46.469 -21.280  1.00 71.78      H21B O
ATOM   8862  N   GLY   176      68.769  44.442 -20.415  1.00 70.15      H21B N
ATOM   8863  CA  GLY   176      68.736  43.815 -21.728  1.00 66.86      H21B C
ATOM   8864  C   GLY   176      70.029  43.889 -22.527  1.00 65.20      H21B C
ATOM   8865  O   GLY   176      70.210  43.127 -23.485  1.00 64.83      H21B O
ATOM   8866  N   LEU   177      70.931  44.791 -22.137  1.00 62.07      H21B N
ATOM   8867  CA  LEU   177      72.141  45.050 -22.913  1.00 57.24      H21B C
ATOM   8868  CB  LEU   177      72.484  46.530 -22.838  1.00 57.31      H21B C
ATOM   8869  CG  LEU   177      71.501  47.426 -23.584  1.00 57.05      H21B C
ATOM   8870  CD1 LEU   177      71.938  48.874 -23.476  1.00 57.20      H21B C
ATOM   8871  CD2 LEU   177      71.436  46.997 -25.032  1.00 57.12      H21B C
ATOM   8872  C   LEU   177      73.357  44.217 -22.511  1.00 54.53      H21B C
ATOM   8873  O   LEU   177      73.426  43.700 -21.405  1.00 54.83      H21B O
ATOM   8874  N   TYR   178      74.312  44.093 -23.428  1.00 51.17      H21B N
ATOM   8875  CA  TYR   178      75.484  43.241 -23.240  1.00 48.45      H21B C
ATOM   8876  CB  TYR   178      75.706  42.398 -24.488  1.00 50.40      H21B C
ATOM   8877  CG  TYR   178      74.710  41.284 -24.665  1.00 54.91      H21B C
ATOM   8878  CD1 TYR   178      75.084  39.954 -24.470  1.00 56.36      H21B C
ATOM   8879  CE1 TYR   178      74.190  38.922 -24.662  1.00 55.89      H21B C
ATOM   8880  CD2 TYR   178      73.400  41.547 -25.057  1.00 56.50      H21B C
ATOM   8881  CE2 TYR   178      72.499  40.513 -25.251  1.00 57.35      H21B C
ATOM   8882  CZ  TYR   178      72.904  39.206 -25.052  1.00 56.84      H21B C
ATOM   8883  OH  TYR   178      72.014  38.179 -25.249  1.00 58.94      H21B O
ATOM   8884  C   TYR   178      76.790  43.988 -22.922  1.00 45.48      H21B C
ATOM   8885  O   TYR   178      76.992  45.136 -23.331  1.00 42.53      H21B O
ATOM   8886  N   SER   179      77.678  43.312 -22.203  1.00 42.07      H21B N
ATOM   8887  CA  SER   179      79.030  43.814 -21.992  1.00 41.79      H21B C
ATOM   8888  CB  SER   179      79.101  44.678 -20.721  1.00 40.35      H21B C
ATOM   8889  OG  SER   179      78.480  45.938 -20.886  1.00 39.39      H21B O
ATOM   8890  C   SER   179      80.025  42.657 -21.868  1.00 40.86      H21B C
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ATOM   8891  O   SER   179      79.888  41.808 -20.998  1.00 41.44      H21B O
ATOM   8892  N   LEU   180      81.025  42.615 -22.740  1.00 39.48      H21B N
ATOM   8893  CA  LEU   180      82.168  41.752 -22.495  1.00 38.55      H21B C
ATOM   8894  CB  LEU   180      82.356  40.749 -23.644  1.00 38.54      H21B C
ATOM   8895  CG  LEU   180      82.521  41.258 -25.080  1.00 39.73      H21B C
ATOM   8896  CD1 LEU   180      83.775  42.126 -25.212  1.00 40.85      H21B C
ATOM   8897  CD2 LEU   180      82.624  40.063 -26.010  1.00 39.95      H21B C
ATOM   8898  C   LEU   180      83.403  42.628 -22.334  1.00 38.44      H21B C
ATOM   8899  O   LEU   180      83.321  43.848 -22.463  1.00 38.53      H21B O
ATOM   8900  N   SER   181      84.540  42.011 -22.033  1.00 37.53      H21B N
ATOM   8901  CA  SER   181      85.803  42.731 -22.001  1.00 37.68      H21B C
ATOM   8902  CB  SER   181      86.069  43.318 -20.607  1.00 37.05      H21B C
ATOM   8903  OG  SER   181      85.701  42.431 -19.566  1.00 37.89      H21B O
ATOM   8904  C   SER   181      86.931  41.809 -22.408  1.00 38.52      H21B C
ATOM   8905  O   SER   181      86.928  40.639 -22.067  1.00 38.90      H21B O
ATOM   8906  N   SER   182      87.881  42.334 -23.174  1.00 39.83      H21B N
ATOM   8907  CA  SER   182      88.983  41.528 -23.659  1.00 39.81      H21B C
ATOM   8908  CB  SER   182      89.139  41.681 -25.166  1.00 39.45      H21B C
ATOM   8909  OG  SER   182      90.164  40.820 -25.641  1.00 41.46      H21B O
ATOM   8910  C   SER   182      90.262  41.955 -22.964  1.00 40.20      H21B C
ATOM   8911  O   SER   182      90.544  43.149 -22.828  1.00 38.40      H21B O
ATOM   8912  N   VAL   183      91.022  40.967 -22.507  1.00 40.90      H21B N
ATOM   8913  CA  VAL   183      92.246  41.226 -21.767  1.00 42.48      H21B C
ATOM   8914  CB  VAL   183      92.213  40.579 -20.356  1.00 41.50      H21B C
ATOM   8915  CG1 VAL   183      93.340  39.579 -20.229  1.00 41.59      H21B C
ATOM   8916  CG2 VAL   183      92.335  41.636 -19.273  1.00 40.00      H21B C
ATOM   8917  C   VAL   183      93.384  40.596 -22.544  1.00 43.84      H21B C
ATOM   8918  O   VAL   183      93.262  39.464 -23.007  1.00 43.94      H21B O
ATOM   8919  N   VAL   184      94.486  41.321 -22.694  1.00 44.89      H21B N
ATOM   8920  CA  VAL   184      95.714  40.683 -23.142  1.00 47.11      H21B C
ATOM   8921  CB  VAL   184      96.204  41.307 -24.477  1.00 45.90      H21B C
ATOM   8922  CG1 VAL   184      96.653  42.736 -24.269  1.00 45.60      H21B C
ATOM   8923  CG2 VAL   184      97.322  40.469 -25.050  1.00 46.59      H21B C
ATOM   8924  C   VAL   184      96.786  40.813 -22.053  1.00 49.55      H21B C
ATOM   8925  O   VAL   184      96.842  41.827 -21.353  1.00 48.61      H21B O
ATOM   8926  N   THR   185      97.604  39.775 -21.887  1.00 51.80      H21B N
ATOM   8927  CA  THR   185      98.753  39.851 -20.986  1.00 54.28      H21B C
ATOM   8928  CB  THR   185      98.912  38.581 -20.125  1.00 55.24      H21B C
ATOM   8929  OG1 THR   185      99.015  37.434 -20.977  1.00 57.32      H21B O
ATOM   8930  CG2 THR   185      97.728  38.409 -19.188  1.00 56.03      H21B C
ATOM   8931  C   THR   185     100.028  40.027 -21.791  1.00 57.09      H21B C
ATOM   8932  O   THR   185     100.246  39.332 -22.793  1.00 56.47      H21B O
ATOM   8933  N   VAL   186     100.863  40.961 -21.340  1.00 60.48      H21B N
ATOM   8934  CA  VAL   186     102.081  41.354 -22.045  1.00 63.14      H21B C
ATOM   8935  CB  VAL   186     101.834  42.577 -22.931  1.00 63.28      H21B C
ATOM   8936  CG1 VAL   186     100.857  42.232 -24.023  1.00 63.21      H21B C
ATOM   8937  CG2 VAL   186     101.306  43.725 -22.082  1.00 63.11      H21B C
ATOM   8938  C   VAL   186     103.187  41.719 -21.059  1.00 67.74      H21B C
ATOM   8939  O   VAL   186     102.917  42.082 -19.909  1.00 67.37      H21B O
ATOM   8940  N   PRO   187     104.453  41.639 -21.505  1.00 72.12      H21B N
ATOM   8941  CD  PRO   187     104.854  41.036 -22.788  1.00 71.71      H21B C
ATOM   8942  CA  PRO   187     105.618  42.055 -20.718  1.00 73.03      H21B C
ATOM   8943  CB  PRO   187     106.789  41.807 -21.659  1.00 72.51      H21B C
ATOM   8944  CG  PRO   187     106.303  40.741 -22.576  1.00 71.49      H21B C
ATOM   8945  C   PRO   187     105.524  43.514 -20.312  1.00 76.95      H21B C
ATOM   8946  O   PRO   187     105.373  44.389 -21.165  1.00 78.69      H21B O
ATOM   8947  N   SER   188     105.619  43.767 -19.009  1.00 80.50      H21B N
ATOM   8948  CA  SER   188     105.532  45.124 -18.464  1.00 82.60      H21B C
ATOM   8949  CB  SER   188     105.372  45.064 -16.946  1.00 82.32      H21B C
ATOM   8950  OG  SER   188     106.304  44.157 -16.387  1.00 81.51      H21B O
ATOM   8951  C   SER   188     106.756  45.969 -18.819  1.00 83.71      H21B C
ATOM   8952  O   SER   188     106.805  47.170 -18.543  1.00 84.16      H21B O
ATOM   8953  N   SER   189     107.746  45.321 -19.420  1.00 84.52      H21B N
ATOM   8954  CA  SER   189     108.873  46.014 -20.027  1.00 85.15      H21B C
ATOM   8955  CB  SER   189     109.991  45.015 -20.320  1.00 84.73      H21B C
ATOM   8956  OG  SER   189     109.521  43.969 -21.154  1.00 84.01      H21B O
ATOM   8957  C   SER   189     108.413  46.671 -21.328  1.00 86.33      H21B C
ATOM   8958  O   SER   189     108.841  47.777 -21.675  1.00 85.19      H21B O
ATOM   8959  N   SER   190     107.530  45.982 -22.042  1.00 87.47      H21B N
ATOM   8960  CA  SER   190     107.110  46.423 -23.361  1.00 88.98      H21B C
ATOM   8961  CB  SER   190     106.444  45.262 -24.102  1.00 89.63      H21B C
ATOM   8962  OG  SER   190     106.386  45.516 -25.496  1.00 90.22      H21B O
ATOM   8963  C   SER   190     106.156  47.615 -23.282  1.00 88.95      H21B C
ATOM   8964  O   SER   190     105.962  48.334 -24.264  1.00 89.75      H21B O
ATOM   8965  N   LEU   191     105.562  47.826 -22.113  1.00 88.06      H21B N
ATOM   8966  CA  LEU   191     104.711  48.990 -21.912  1.00 87.45      H21B C
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ATOM   8967  CB  LEU   191     104.184  49.024 -20.474  1.00 86.50      H21B C
ATOM   8968  CG  LEU   191     103.411  47.794 -19.980  1.00 84.98      H21B C
ATOM   8969  CD1 LEU   191     103.043  47.973 -18.519  1.00 83.28      H21B C
ATOM   8970  CD2 LEU   191     102.159  47.595 -20.819  1.00 84.31      H21B C
ATOM   8971  C   LEU   191     105.534  50.241 -22.192  1.00 88.10      H21B C
ATOM   8972  O   LEU   191     106.747  50.257 -21.974  1.00 88.98      H21B O
ATOM   8973  N   GLY   192     104.882  51.287 -22.686  1.00 88.53      H21B N
ATOM   8974  CA  GLY   192     105.593  52.525 -22.956  1.00 89.47      H21B C
ATOM   8975  C   GLY   192     106.283  52.577 -24.314  1.00 90.10      H21B C
ATOM   8976  O   GLY   192     106.279  53.623 -24.971  1.00 90.36      H21B O
ATOM   8977  N   THR   193     106.877  51.462 -24.739  1.00 89.29      H21B N
ATOM   8978  CA  THR   193     107.531  51.396 -26.043  1.00 88.82      H21B C
ATOM   8979  CB  THR   193     108.976  50.904 -25.928  1.00 88.80      H21B C
ATOM   8980  OG1 THR   193     108.990  49.601 -25.336  1.00 89.49      H21B O
ATOM   8981  CG2 THR   193     109.791  51.861 -25.080  1.00 88.67      H21B C
ATOM   8982  C   THR   193     106.795  50.468 -26.992  1.00 88.83      H21B C
ATOM   8983  O   THR   193     107.223  50.261 -28.129  1.00 88.87      H21B O
ATOM   8984  N   GLN   194     105.695  49.895 -26.515  1.00 88.58      H21B N
ATOM   8985  CA  GLN   194     104.795  49.153 -27.387  1.00 87.54      H21B C
ATOM   8986  CB  GLN   194     104.771  47.671 -27.010  1.00 87.84      H21B C
ATOM   8987  CG  GLN   194     103.816  46.833 -27.853  1.00 87.81      H21B C
ATOM   8988  CD  GLN   194     104.129  46.880 -29.333  1.00 87.69      H21B C
ATOM   8989  OE1 GLN   194     104.621  47.885 -29.844  1.00 88.63      H21B O
ATOM   8990  NE2 GLN   194     103.844  45.788 -30.033  1.00 88.04      H21B N
ATOM   8991  C   GLN   194     103.381  49.712 -27.337  1.00 86.21      H21B C
ATOM   8992  O   GLN   194     102.820  49.944 -26.264  1.00 85.43      H21B O
ATOM   8993  N   THR   195     102.813  49.934 -28.514  1.00 84.94      H21B N
ATOM   8994  CA  THR   195     101.447  50.408 -28.602  1.00 83.65      H21B C
ATOM   8995  CB  THR   195     101.205  51.195 -29.918  1.00 84.72      H21B C
ATOM   8996  OG1 THR   195     101.519  50.364 -31.043  1.00 84.98      H21B O
ATOM   8997  CG2 THR   195     102.077  52.443 -29.959  1.00 85.59      H21B C
ATOM   8998  C   THR   195     100.521  49.204 -28.547  1.00 80.85      H21B C
ATOM   8999  O   THR   195     100.749  48.207 -29.227  1.00 79.88      H21B O
ATOM   9000  N   TYR   196      99.487  49.289 -27.719  1.00 78.25      H21B N
ATOM   9001  CA  TYR   196      98.466  48.256 -27.700  1.00 76.01      H21B C
ATOM   9002  CB  TYR   196      98.425  47.577 -26.326  1.00 77.54      H21B C
ATOM   9003  CG  TYR   196      99.661  46.749 -26.046  1.00 79.65      H21B C
ATOM   9004  CD1 TYR   196     100.738  47.281 -25.342  1.00 81.11      H21B C
ATOM   9005  CE1 TYR   196     101.898  46.540 -25.132  1.00 81.59      H21B C
ATOM   9006  CD2 TYR   196      99.773  45.449 -26.528  1.00 80.81      H21B C
ATOM   9007  CE2 TYR   196     100.927  44.700 -26.323  1.00 81.26      H21B C
ATOM   9008  CZ  TYR   196     101.987  45.251 -25.628  1.00 81.91      H21B C
ATOM   9009  OH  TYR   196     103.143  44.523 -25.455  1.00 81.33      H21B O
ATOM   9010  C   TYR   196      97.109  48.849 -28.059  1.00 73.03      H21B C
ATOM   9011  O   TYR   196      96.591  49.728 -27.362  1.00 72.39      H21B O
ATOM   9012  N   ILE   197      96.553  48.374 -29.170  1.00 68.83      H21B N
ATOM   9013  CA  ILE   197      95.256  48.838 -29.634  1.00 64.42      H21B C
ATOM   9014  CB  ILE   197      95.323  49.442 -31.055  1.00 63.76      H21B C
ATOM   9015  CG2 ILE   197      93.937  49.836 -31.516  1.00 59.55      H21B C
ATOM   9016  CG1 ILE   197      96.218  50.676 -31.064  1.00 63.89      H21B C
ATOM   9017  CD1 ILE   197      96.068  51.503 -32.321  1.00 66.94      H21B C
ATOM   9018  C   ILE   197      94.266  47.698 -29.670  1.00 61.31      H21B C
ATOM   9019  O   ILE   197      94.502  46.665 -30.296  1.00 61.15      H21B O
ATOM   9020  N   CYS   198      93.148  47.904 -28.990  1.00 57.57      H21B N
ATOM   9021  CA  CYS   198      92.029  46.985 -29.052  1.00 52.01      H21B C
ATOM   9022  C   CYS   198      91.039  47.522 -30.085  1.00 47.01      H21B C
ATOM   9023  O   CYS   198      90.588  48.659 -30.004  1.00 44.41      H21B O
ATOM   9024  CB  CYS   198      91.394  46.878 -27.665  1.00 52.51      H21B C
ATOM   9025  SG  CYS   198      89.863  47.823 -27.408  1.00 57.12      H21B S
ATOM   9026  N   ASN   199      90.735  46.713 -31.088  1.00 44.35      H21B N
ATOM   9027  CA  ASN   199      89.775  47.131 -32.096  1.00 42.24      H21B C
ATOM   9028  CB  ASN   199      90.440  47.172 -33.472  1.00 41.57      H21B C
ATOM   9029  CG  ASN   199      91.497  46.126 -33.630  1.00 39.25      H21B C
ATOM   9030  OD1 ASN   199      91.202  44.937 -33.614  1.00 37.00      H21B O
ATOM   9031  ND2 ASN   199      92.743  46.560 -33.779  1.00 37.76      H21B N
ATOM   9032  C   ASN   199      88.541  46.228 -32.110  1.00 40.58      H21B C
ATOM   9033  O   ASN   199      88.638  45.017 -32.287  1.00 39.56      H21B O
ATOM   9034  N   VAL   200      87.384  46.855 -31.919  1.00 39.66      H21B N
ATOM   9035  CA  VAL   200      86.151  46.167 -31.582  1.00 40.25      H21B C
ATOM   9036  CB  VAL   200      85.492  46.801 -30.333  1.00 38.62      H21B C
ATOM   9037  CG1 VAL   200      84.361  45.920 -29.842  1.00 37.80      H21B C
ATOM   9038  CG2 VAL   200      86.530  47.024 -29.237  1.00 35.75      H21B C
ATOM   9039  C   VAL   200      85.173  46.252 -32.748  1.00 41.51      H21B C
ATOM   9040  O   VAL   200      85.173  47.212 -33.515  1.00 41.66      H21B O
ATOM   9041  N   ASN   201      84.338  45.239 -32.887  1.00 43.17      H21B N
ATOM   9042  CA  ASN   201      83.464  45.187 -34.034  1.00 46.02      H21B C
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ATOM   9043  CB  ASN   201      84.057  44.284 -35.117  1.00 50.18      H21B C
ATOM   9044  CG  ASN   201      84.087  44.956 -36.485  1.00 53.80      H21B C
ATOM   9045  OD1 ASN   201      83.056  45.422 -36.991  1.00 55.38      H21B O
ATOM   9046  ND2 ASN   201      85.273  45.011 -37.089  1.00 55.20      H21B N
ATOM   9047  C   ASN   201      82.092  44.686 -33.657  1.00 46.12      H21B C
ATOM   9048  O   ASN   201      81.946  43.641 -33.017  1.00 45.78      H21B O
ATOM   9049  N   HIS   202      81.082  45.440 -34.065  1.00 46.00      H21B N
ATOM   9050  CA  HIS   202      79.718  45.037 -33.829  1.00 46.36      H21B C
ATOM   9051  CB  HIS   202      79.070  45.968 -32.815  1.00 44.13      H21B C
ATOM   9052  CG  HIS   202      77.789  45.438 -32.269  1.00 42.81      H21B C
ATOM   9053  CD2 HIS   202      77.351  44.168 -32.119  1.00 40.00      H21B C
ATOM   9054  ND1 HIS   202      76.762  46.252 -31.849  1.00 43.89      H21B N
ATOM   9055  CE1 HIS   202      75.743  45.504 -31.468  1.00 42.77      H21B C
ATOM   9056  NE2 HIS   202      76.076  44.237 -31.623  1.00 40.89      H21B N
ATOM   9057  C   HIS   202      78.942  45.067 -35.135  1.00 48.29      H21B C
ATOM   9058  O   HIS   202      78.308  46.067 -35.461  1.00 48.19      H21B O
ATOM   9059  N   LYS   203      78.987  43.966 -35.880  1.00 50.80      H21B N
ATOM   9060  CA  LYS   203      78.283  43.915 -37.151  1.00 53.50      H21B C
ATOM   9061  CB  LYS   203      78.396  42.522 -37.777  1.00 54.50      H21B C
ATOM   9062  CG  LYS   203      79.807  42.159 -38.238  1.00 59.30      H21B C
ATOM   9063  CD  LYS   203      80.169  40.691 -37.915  1.00 63.35      H21B C
ATOM   9064  CE  LYS   203      79.219  39.692 -38.598  1.00 66.63      H21B C
ATOM   9065  NZ  LYS   203      79.247  38.318 -38.006  1.00 69.31      H21B N
ATOM   9066  C   LYS   203      76.815  44.301 -36.977  1.00 52.84      H21B C
ATOM   9067  O   LYS   203      76.298  45.132 -37.715  1.00 53.76      H21B O
ATOM   9068  N   PRO   204      76.129  43.728 -35.979  1.00 51.43      H21B N
ATOM   9069  CD  PRO   204      76.587  42.808 -34.926  1.00 50.05      H21B C
ATOM   9070  CA  PRO   204      74.703  44.037 -35.850  1.00 51.46      H21B C
ATOM   9071  CB  PRO   204      74.311  43.393 -34.523  1.00 48.83      H21B C
ATOM   9072  CG  PRO   204      75.294  42.308 -34.338  1.00 48.98      H21B C
ATOM   9073  C   PRO   204      74.460  45.533 -35.845  1.00 51.76      H21B C
ATOM   9074  O   PRO   204      73.498  46.021 -36.431  1.00 52.73      H21B O
ATOM   9075  N   SER   205      75.354  46.259 -35.187  1.00 52.99      H21B N
ATOM   9076  CA  SER   205      75.254  47.708 -35.096  1.00 53.35      H21B C
ATOM   9077  CB  SER   205      75.774  48.181 -33.744  1.00 53.63      H21B C
ATOM   9078  OG  SER   205      75.929  49.585 -33.733  1.00 54.28      H21B O
ATOM   9079  C   SER   205      76.016  48.431 -36.203  1.00 53.57      H21B C
ATOM   9080  O   SER   205      75.883  49.642 -36.354  1.00 53.69      H21B O
ATOM   9081  N   ASN   206      76.810  47.696 -36.975  1.00 54.02      H21B N
ATOM   9082  CA  ASN   206      77.655  48.315 -37.986  1.00 54.69      H21B C
ATOM   9083  CB  ASN   206      76.796  48.942 -39.077  1.00 52.53      H21B C
ATOM   9084  CG  ASN   206      76.283  47.923 -40.060  1.00 52.56      H21B C
ATOM   9085  OD1 ASN   206      75.156  48.030 -40.540  1.00 51.22      H21B O
ATOM   9086  ND2 ASN   206      77.112  46.921 -40.373  1.00 51.22      H21B N
ATOM   9087  C   ASN   206      78.556  49.373 -37.350  1.00 55.72      H21B C
ATOM   9088  O   ASN   206      78.725  50.477 -37.867  1.00 56.49      H21B O
ATOM   9089  N   THR   207      79.129  49.011 -36.211  1.00 56.16      H21B N
ATOM   9090  CA  THR   207      79.997  49.892 -35.464  1.00 55.85      H21B C
ATOM   9091  CB  THR   207      79.431  50.120 -34.056  1.00 55.15      H21B C
ATOM   9092  OG1 THR   207      78.105  50.651 -34.155  1.00 52.50      H21B O
ATOM   9093  CG2 THR   207      80.305  51.085 -33.282  1.00 53.38      H21B C
ATOM   9094  C   THR   207      81.368  49.238 -35.354  1.00 57.06      H21B C
ATOM   9095  O   THR   207      81.475  48.067 -35.000  1.00 56.67      H21B O
ATOM   9096  N   LYS   208      82.414  49.986 -35.675  1.00 58.26      H21B N
ATOM   9097  CA  LYS   208      83.765  49.517 -35.437  1.00 59.43      H21B C
ATOM   9098  CB  LYS   208      84.490  49.263 -36.756  1.00 62.37      H21B C
ATOM   9099  CG  LYS   208      85.846  48.597 -36.585  1.00 68.71      H21B C
ATOM   9100  CD  LYS   208      86.654  48.621 -37.877  1.00 76.76      H21B C
ATOM   9101  CE  LYS   208      86.050  47.703 -38.944  1.00 85.44      H21B C
ATOM   9102  NZ  LYS   208      84.704  48.149 -39.439  1.00 94.28      H21B N
ATOM   9103  C   LYS   208      84.519  50.558 -34.629  1.00 57.52      H21B C
ATOM   9104  O   LYS   208      84.623  51.721 -35.036  1.00 58.10      H21B O
ATOM   9105  N   VAL   209      85.029  50.136 -33.476  1.00 54.42      H21B N
ATOM   9106  CA  VAL   209      85.791  51.019 -32.604  1.00 50.92      H21B C
ATOM   9107  CB  VAL   209      85.220  51.053 -31.177  1.00 48.81      H21B C
ATOM   9108  CG1 VAL   209      86.086  51.946 -30.313  1.00 48.17      H21B C
ATOM   9109  CG2 VAL   209      83.807  51.556 -31.188  1.00 46.41      H21B C
ATOM   9110  C   VAL   209      87.236  50.578 -32.491  1.00 49.62      H21B C
ATOM   9111  O   VAL   209      87.520  49.408 -32.274  1.00 48.07      H21B O
ATOM   9112  N   ASP   210      88.156  51.521 -32.626  1.00 50.05      H21B N
ATOM   9113  CA  ASP   210      89.555  51.238 -32.331  1.00 51.15      H21B C
ATOM   9114  CB  ASP   210      90.434  51.542 -33.551  1.00 53.47      H21B C
ATOM   9115  CG  ASP   210      90.104  50.655 -34.753  1.00 57.01      H21B C
ATOM   9116  OD1 ASP   210      89.597  49.530 -34.558  1.00 57.51      H21B O
ATOM   9117  OD2 ASP   210      90.351  51.085 -35.903  1.00 60.50      H21B O
ATOM   9118  C   ASP   210      89.999  52.068 -31.128  1.00 49.56      H21B C
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ATOM   9119  O   ASP  210      89.709  53.260 -31.033  1.00 47.85      H21B O
ATOM   9120  N   LYS  211      90.688  51.424 -30.197  1.00 48.61      H21B N
ATOM   9121  CA  LYS  211      91.069  52.086 -28.969  1.00 50.47      H21B C
ATOM   9122  CB  LYS  211      90.181  51.613 -27.828  1.00 48.97      H21B C
ATOM   9123  CG  LYS  211      90.526  52.218 -26.501  1.00 48.07      H21B C
ATOM   9124  CD  LYS  211      90.131  53.664 -26.478  1.00 51.05      H21B C
ATOM   9125  CE  LYS  211      88.626  53.799 -26.489  1.00 53.67      H21B C
ATOM   9126  NZ  LYS  211      88.191  55.222 -26.529  1.00 57.46      H21B N
ATOM   9127  C   LYS  211      92.518  51.784 -28.647  1.00 52.98      H21B C
ATOM   9128  O   LYS  211      92.950  50.644 -28.718  1.00 52.69      H21B O
ATOM   9129  N   LYS  212      93.276  52.816 -28.304  1.00 56.95      H21B N
ATOM   9130  CA  LYS  212      94.631  52.615 -27.835  1.00 59.46      H21B C
ATOM   9131  CB  LYS  212      95.538  53.764 -28.284  1.00 61.77      H21B C
ATOM   9132  CG  LYS  212      96.779  53.957 -27.410  1.00 65.33      H21B C
ATOM   9133  CD  LYS  212      97.512  55.244 -27.743  1.00 70.28      H21B C
ATOM   9134  CE  LYS  212      98.557  55.037 -28.832  1.00 74.23      H21B C
ATOM   9135  NZ  LYS  212      99.718  54.250 -28.339  1.00 79.11      H21B N
ATOM   9136  C   LYS  212      94.581  52.557 -26.326  1.00 60.12      H21B C
ATOM   9137  O   LYS  212      94.098  53.481 -25.670  1.00 59.63      H21B O
ATOM   9138  N   VAL  213      95.070  51.458 -25.774  1.00 62.31      H21B N
ATOM   9139  CA  VAL  213      95.155  51.335 -24.329  1.00 65.85      H21B C
ATOM   9140  CB  VAL  213      94.782  49.926 -23.860  1.00 64.74      H21B C
ATOM   9141  CG1 VAL  213      94.776  49.873 -22.337  1.00 62.94      H21B C
ATOM   9142  CG2 VAL  213      93.427  49.548 -24.422  1.00 63.10      H21B C
ATOM   9143  C   VAL  213      96.564  51.650 -23.875  1.00 68.37      H21B C
ATOM   9144  O   VAL  213      97.507  50.939 -24.208  1.00 66.85      H21B O
ATOM   9145  N   GLU  214      96.688  52.733 -23.120  1.00 73.64      H21B N
ATOM   9146  CA  GLU  214      97.975  53.188 -22.615  1.00 79.85      H21B C
ATOM   9147  CB  GLU  214      98.196  54.657 -22.980  1.00 80.72      H21B C
ATOM   9148  CG  GLU  214      98.423  54.944 -24.465  1.00 83.09      H21B C
ATOM   9149  CD  GLU  214      98.686  56.425 -24.731  1.00 84.01      H21B C
ATOM   9150  OE1 GLU  214      99.337  56.750 -25.748  1.00 84.45      H21B O
ATOM   9151  OE2 GLU  214      98.239  57.266 -23.916  1.00 84.49      H21B O
ATOM   9152  C   GLU  214      98.009  53.041 -21.100  1.00 83.59      H21B C
ATOM   9153  O   GLU  214      96.981  52.814 -20.463  1.00 83.78      H21B O
ATOM   9154  N   PRO  215      99.199  53.164 -20.505  1.00 86.98      H21B N
ATOM   9155  CD  PRO  215     100.495  52.995 -21.181  1.00 87.43      H21B C
ATOM   9156  CA  PRO  215      99.349  53.266 -19.049  1.00 91.94      H21B C
ATOM   9157  CB  PRO  215     100.858  53.356 -18.852  1.00 90.16      H21B C
ATOM   9158  CG  PRO  215     101.419  52.646 -20.051  1.00 88.99      H21B C
ATOM   9159  C   PRO  215      98.620  54.468 -18.466  1.00 96.26      H21B C
ATOM   9160  O   PRO  215      98.343  55.433 -19.167  1.00 96.59      H21B O
ATOM   9161  N   LYS  216      98.315  54.402 -17.177  1.00102.66      H21B N
ATOM   9162  CA  LYS  216      97.499  55.419 -16.521  1.00109.92      H21B C
ATOM   9163  CB  LYS  216      97.121  54.949 -15.109  1.00114.68      H21B C
ATOM   9164  CG  LYS  216      96.487  53.556 -15.053  1.00120.32      H21B C
ATOM   9165  CD  LYS  216      96.274  53.079 -13.613  1.00126.26      H21B C
ATOM   9166  CE  LYS  216      95.639  51.689 -13.570  1.00131.57      H21B C
ATOM   9167  NZ  LYS  216      95.637  51.080 -12.205  1.00135.66      H21B N
ATOM   9168  C   LYS  216      98.209  56.776 -16.448  1.00111.87      H21B C
ATOM   9169  O   LYS  216      98.520  57.236 -15.326  1.00113.12      H21B O
ATOM   9170  OXT LYS  216      98.451  57.368 -17.519  1.00114.65      H21B O
TER    9171       LYS  216                                             H21B
END
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TABLE 35.4

ATOM	1	CB	TRP	453	-29.096	34.072	11.297	1.00	62.90	A	C
ATOM	2	CG	TRP	453	-28.288	34.936	10.370	1.00	64.93	A	C
ATOM	3	CD2	TRP	453	-27.397	34.492	9.339	1.00	66.49	A	C
ATOM	4	CE2	TRP	453	-26.843	35.642	8.742	1.00	67.05	A	C
ATOM	5	CE3	TRP	453	-27.013	33.233	8.865	1.00	67.25	A	C
ATOM	6	CD1	TRP	453	-28.241	36.301	10.353	1.00	65.59	A	C
ATOM	7	NE1	TRP	453	-27.375	36.733	9.378	1.00	65.65	A	N
ATOM	8	CZ2	TRP	453	-25.924	35.571	7.694	1.00	67.23	A	C
ATOM	9	CZ3	TRP	453	-26.100	33.165	7.824	1.00	67.18	A	C
ATOM	10	CH2	TRP	453	-25.566	34.327	7.252	1.00	67.55	A	C
ATOM	11	C	TRP	453	-27.142	33.092	12.528	1.00	59.11	A	C
ATOM	12	O	TRP	453	-26.061	33.624	12.777	1.00	59.88	A	O
ATOM	13	N	TRP	453	-28.207	35.189	13.329	1.00	61.20	A	N
ATOM	14	CA	TRP	453	-28.450	33.869	12.675	1.00	60.89	A	C
ATOM	15	N	GLN	454	-27.248	31.827	12.137	1.00	55.81	A	N
ATOM	16	CA	GLN	454	-26.072	30.981	11.962	1.00	52.32	A	C
ATOM	17	CB	GLN	454	-26.117	29.821	12.962	1.00	54.31	A	C
ATOM	18	CG	GLN	454	-25.914	28.448	12.353	1.00	57.49	A	C
ATOM	19	CD	GLN	454	-24.637	27.773	12.827	1.00	59.72	A	C
ATOM	20	OE1	GLN	454	-23.617	28.430	13.055	1.00	60.00	A	O
ATOM	21	NE2	GLN	454	-24.688	26.450	12.973	1.00	59.65	A	N
ATOM	22	C	GLN	454	-26.011	30.456	10.530	1.00	47.73	A	C
ATOM	23	O	GLN	454	-27.041	30.329	9.867	1.00	46.06	A	O
ATOM	24	N	LEU	455	-24.808	30.158	10.049	1.00	43.78	A	N
ATOM	25	CA	LEU	455	-24.651	29.736	8.658	1.00	41.00	A	C
ATOM	26	CB	LEU	455	-23.386	30.356	8.063	1.00	41.51	A	C
ATOM	27	CG	LEU	455	-23.082	30.107	6.583	1.00	41.00	A	C
ATOM	28	CD1	LEU	455	-24.272	30.468	5.716	1.00	39.45	A	C
ATOM	29	CD2	LEU	455	-21.874	30.934	6.191	1.00	42.57	A	C
ATOM	30	C	LEU	455	-24.602	28.217	8.531	1.00	38.55	A	C
ATOM	31	O	LEU	455	-23.744	27.562	9.122	1.00	38.78	A	O
ATOM	32	N	PHE	456	-25.540	27.665	7.766	1.00	34.53	A	N
ATOM	33	CA	PHE	456	-25.605	26.226	7.524	1.00	32.19	A	C
ATOM	34	CB	PHE	456	-27.039	25.715	7.711	1.00	30.96	A	C
ATOM	35	CG	PHE	456	-27.517	25.742	9.135	1.00	30.83	A	C
ATOM	36	CD1	PHE	456	-27.303	24.657	9.973	1.00	29.93	A	C
ATOM	37	CD2	PHE	456	-28.186	26.850	9.636	1.00	30.09	A	C
ATOM	38	CE1	PHE	456	-27.749	24.675	11.291	1.00	30.85	A	C
ATOM	39	CE2	PHE	456	-28.635	26.877	10.952	1.00	31.15	A	C
ATOM	40	CZ	PHE	456	-28.417	25.789	11.781	1.00	29.38	A	C
ATOM	41	C	PHE	456	-25.154	25.915	6.100	1.00	30.99	A	C
ATOM	42	O	PHE	456	-25.649	26.508	5.148	1.00	30.86	A	O
ATOM	43	N	CYS	457	-24.222	24.981	5.957	1.00	30.33	A	N
ATOM	44	CA	CYS	457	-23.812	24.518	4.636	1.00	29.83	A	C
ATOM	45	C	CYS	457	-23.729	23.002	4.598	1.00	29.43	A	C
ATOM	46	O	CYS	457	-23.477	22.357	5.617	1.00	30.24	A	O
ATOM	47	CB	CYS	457	-22.442	25.067	4.260	1.00	30.42	A	C
ATOM	48	SG	CYS	457	-22.270	26.868	4.126	1.00	33.48	A	S
ATOM	49	N	ARG	458	-23.932	22.440	3.412	1.00	28.73	A	N
ATOM	50	CA	ARG	458	-23.732	21.013	3.192	1.00	27.98	A	C
ATOM	51	CB	ARG	458	-25.082	20.295	3.128	1.00	27.46	A	C
ATOM	52	CG	ARG	458	-25.982	20.816	2.021	1.00	27.71	A	C
ATOM	53	CD	ARG	458	-27.371	20.197	2.092	1.00	28.19	A	C
ATOM	54	NE	ARG	458	-28.104	20.474	0.864	1.00	28.26	A	N
ATOM	55	CZ	ARG	458	-28.211	19.619	-0.150	1.00	28.99	A	C
ATOM	56	NH1	ARG	458	-28.891	19.965	-1.235	1.00	28.33	A	N
ATOM	57	NH2	ARG	458	-27.651	18.416	-0.073	1.00	26.24	A	N
ATOM	58	C	ARG	458	-22.969	20.809	1.889	1.00	26.26	A	C
ATOM	59	O	ARG	458	-22.870	21.721	1.074	1.00	25.98	A	O
ATOM	60	N	THR	459	-22.425	19.612	1.705	1.00	24.49	A	N
ATOM	61	CA	THR	459	-21.655	19.296	0.520	1.00	24.90	A	C
ATOM	62	CB	THR	459	-20.334	18.588	0.898	1.00	25.10	A	C
ATOM	63	OG1	THR	459	-19.493	19.502	1.608	1.00	25.42	A	O
ATOM	64	CG2	THR	459	-19.609	18.094	-0.344	1.00	22.93	A	C
ATOM	65	C	THR	459	-22.476	18.383	-0.379	1.00	26.20	A	C
ATOM	66	O	THR	459	-23.093	17.428	0.093	1.00	24.85	A	O
ATOM	67	N	VAL	460	-22.493	18.690	-1.672	1.00	26.69	A	N
ATOM	68	CA	VAL	460	-23.209	17.869	-2.637	1.00	27.29	A	C
ATOM	69	CB	VAL	460	-24.313	18.676	-3.343	1.00	29.26	A	C
ATOM	70	CG1	VAL	460	-24.981	17.823	-4.419	1.00	26.28	A	C
ATOM	71	CG2	VAL	460	-25.339	19.146	-2.317	1.00	30.35	A	C
ATOM	72	C	VAL	460	-22.264	17.321	-3.693	1.00	27.26	A	C
ATOM	73	O	VAL	460	-21.661	18.078	-4.451	1.00	29.73	A	O
ATOM	74	N	TRP	461	-22.140	16.001	-3.740	1.00	26.25	A	N

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ATOM     75  CA  TRP   461     -21.368  15.351  -4.788  1.00 26.76      A    C
ATOM     76  CB  TRP   461     -20.764  14.038  -4.268  1.00 24.57      A    C
ATOM     77  CG  TRP   461     -19.606  14.235  -3.334  1.00 24.74      A    C
ATOM     78  CD2 TRP   461     -18.218  13.984  -3.613  1.00 24.43      A    C
ATOM     79  CE2 TRP   461     -17.494  14.304  -2.447  1.00 25.75      A    C
ATOM     80  CE3 TRP   461     -17.520  13.521  -4.736  1.00 26.44      A    C
ATOM     81  CD1 TRP   461     -19.660  14.684  -2.046  1.00 23.71      A    C
ATOM     82  NE1 TRP   461     -18.397  14.729  -1.507  1.00 25.76      A    N
ATOM     83  CZ2 TRP   461     -16.103  14.176  -2.368  1.00 28.09      A    C
ATOM     84  CZ3 TRP   461     -16.135  13.392  -4.657  1.00 27.37      A    C
ATOM     85  CH2 TRP   461     -15.444  13.719  -3.480  1.00 26.66      A    C
ATOM     86  C   TRP   461     -22.264  15.076  -5.998  1.00 27.35      A    C
ATOM     87  O   TRP   461     -23.406  14.629  -5.850  1.00 26.99      A    O
ATOM     88  N   SER   462     -21.745  15.364  -7.189  1.00 25.48      A    N
ATOM     89  CA  SER   462     -22.428  15.031  -8.432  1.00 25.19      A    C
ATOM     90  CB  SER   462     -21.732  15.698  -9.626  1.00 24.60      A    C
ATOM     91  OG  SER   462     -20.463  15.099  -9.866  1.00 24.13      A    O
ATOM     92  C   SER   462     -22.384  13.528  -8.627  1.00 24.96      A    C
ATOM     93  O   SER   462     -21.641  12.835  -7.947  1.00 26.57      A    O
ATOM     94  N   ALA   463     -23.176  13.030  -9.566  1.00 26.08      A    N
ATOM     95  CA  ALA   463     -22.921  11.714 -10.139  1.00 27.25      A    C
ATOM     96  CB  ALA   463     -24.042  11.351 -11.106  1.00 24.94      A    C
ATOM     97  C   ALA   463     -21.578  11.774 -10.883  1.00 26.16      A    C
ATOM     98  O   ALA   463     -21.131  12.849 -11.278  1.00 25.40      A    O
ATOM     99  N   HIS   464     -20.939  10.625 -11.066  1.00 26.74      A    N
ATOM    100  CA  HIS   464     -19.723  10.539 -11.873  1.00 29.13      A    C
ATOM    101  CB  HIS   464     -19.297   9.073 -11.991  1.00 30.10      A    C
ATOM    102  CG  HIS   464     -17.948   8.876 -12.610  1.00 31.56      A    C
ATOM    103  CD2 HIS   464     -16.713   8.823 -12.055  1.00 30.82      A    C
ATOM    104  ND1 HIS   464     -17.772   8.653 -13.959  1.00 32.23      A    N
ATOM    105  CE1 HIS   464     -16.488   8.466 -14.208  1.00 31.96      A    C
ATOM    106  NE2 HIS   464     -15.824   8.565 -13.068  1.00 31.64      A    N
ATOM    107  C   HIS   464     -19.977  11.125 -13.272  1.00 29.91      A    C
ATOM    108  O   HIS   464     -21.080  11.013 -13.804  1.00 32.59      A    O
ATOM    109  N   SER   465     -18.959  11.738 -13.870  1.00 28.42      A    N
ATOM    110  CA  SER   465     -19.143  12.475 -15.126  1.00 27.55      A    C
ATOM    111  CB  SER   465     -17.936  13.372 -15.405  1.00 26.69      A    C
ATOM    112  OG  SER   465     -16.774  12.600 -15.663  1.00 26.28      A    O
ATOM    113  C   SER   465     -19.348  11.580 -16.337  1.00 27.89      A    C
ATOM    114  O   SER   465     -19.898  12.012 -17.351  1.00 30.42      A    O
ATOM    115  N   GLY   466     -18.890  10.340 -16.247  1.00 24.79      A    N
ATOM    116  CA  GLY   466     -18.715   9.563 -17.457  1.00 22.23      A    C
ATOM    117  C   GLY   466     -17.259   9.660 -17.871  1.00 25.15      A    C
ATOM    118  O   GLY   466     -16.583  10.644 -17.547  1.00 22.33      A    O
ATOM    119  N   PRO   467     -16.741   8.642 -18.574  1.00 25.86      A    N
ATOM    120  CD  PRO   467     -17.448   7.387 -18.894  1.00 26.23      A    C
ATOM    121  CA  PRO   467     -15.304   8.535 -18.831  1.00 24.52      A    C
ATOM    122  CB  PRO   467     -15.085   7.030 -18.999  1.00 25.31      A    C
ATOM    123  CG  PRO   467     -16.374   6.532 -19.524  1.00 24.11      A    C
ATOM    124  C   PRO   467     -14.787   9.321 -20.029  1.00 24.85      A    C
ATOM    125  O   PRO   467     -13.596   9.522 -20.152  1.00 25.40      A    O
ATOM    126  N   THR   468     -15.660   9.762 -20.923  1.00 24.02      A    N
ATOM    127  CA  THR   468     -15.174  10.270 -22.201  1.00 23.19      A    C
ATOM    128  CB  THR   468     -16.305  10.341 -23.242  1.00 23.48      A    C
ATOM    129  OG1 THR   468     -17.407  11.085 -22.706  1.00 23.61      A    O
ATOM    130  CG2 THR   468     -16.766   8.946 -23.608  1.00 22.59      A    C
ATOM    131  C   THR   468     -14.503  11.640 -22.087  1.00 24.90      A    C
ATOM    132  O   THR   468     -14.594  12.310 -21.060  1.00 23.76      A    O
ATOM    133  N   ARG   469     -13.832  12.044 -23.159  1.00 23.46      A    N
ATOM    134  CA  ARG   469     -12.874  13.140 -23.115  1.00 24.59      A    C
ATOM    135  CB  ARG   469     -12.178  13.250 -24.476  1.00 25.09      A    C
ATOM    136  CG  ARG   469     -11.111  14.318 -24.558  1.00 26.25      A    C
ATOM    137  CD  ARG   469     -10.439  14.323 -25.935  1.00 27.32      A    C
ATOM    138  NE  ARG   469      -9.440  15.382 -26.040  1.00 27.17      A    N
ATOM    139  CZ  ARG   469      -8.581  15.512 -27.046  1.00 25.09      A    C
ATOM    140  NH1 ARG   469      -7.711  16.514 -27.044  1.00 24.35      A    N
ATOM    141  NH2 ARG   469      -8.591  14.644 -28.047  1.00 23.06      A    N
ATOM    142  C   ARG   469     -13.495  14.487 -22.736  1.00 25.75      A    C
ATOM    143  O   ARG   469     -12.891  15.276 -22.009  1.00 23.47      A    O
ATOM    144  N   MET   470     -14.698  14.759 -23.230  1.00 24.77      A    N
ATOM    145  CA  MET   470     -15.328  16.047 -22.965  1.00 24.49      A    C
ATOM    146  CB  MET   470     -15.904  16.621 -24.262  1.00 24.57      A    C
ATOM    147  CG  MET   470     -15.563  18.079 -24.508  1.00 30.96      A    C
ATOM    148  SD  MET   470     -13.788  18.409 -24.583  1.00 31.07      A    S
ATOM    149  CE  MET   470     -13.271  17.434 -25.959  1.00 31.18      A    C
ATOM    150  C   MET   470     -16.425  15.926 -21.908  1.00 24.68      A    C
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ATOM    151  O   MET   470     -17.226  16.848 -21.717  1.00 23.62      A    O
ATOM    152  N   ALA   471     -16.459  14.789 -21.220  1.00 24.16      A    N
ATOM    153  CA  ALA   471     -17.508  14.528 -20.238  1.00 24.20      A    C
ATOM    154  CB  ALA   471     -17.371  13.119 -19.687  1.00 20.75      A    C
ATOM    155  C   ALA   471     -17.452  15.537 -19.096  1.00 25.48      A    C
ATOM    156  O   ALA   471     -16.372  15.975 -18.693  1.00 27.11      A    O
ATOM    157  N   THR   472     -18.617  15.906 -18.578  1.00 24.57      A    N
ATOM    158  CA  THR   472     -18.675  16.811 -17.437  1.00 24.16      A    C
ATOM    159  CB  THR   472     -19.181  18.220 -17.836  1.00 24.01      A    C
ATOM    160  OG1 THR   472     -20.548  18.134 -18.257  1.00 21.91      A    O
ATOM    161  CG2 THR   472     -18.344  18.795 -18.970  1.00 18.59      A    C
ATOM    162  C   THR   472     -19.620  16.260 -16.386  1.00 25.66      A    C
ATOM    163  O   THR   472     -20.508  15.455 -16.690  1.00 24.53      A    O
ATOM    164  N   ALA   473     -19.415  16.700 -15.147  1.00 25.24      A    N
ATOM    165  CA  ALA   473     -20.319  16.393 -14.048  1.00 24.92      A    C
ATOM    166  CB  ALA   473     -19.560  15.661 -12.946  1.00 24.30      A    C
ATOM    167  C   ALA   473     -20.900  17.699 -13.513  1.00 25.27      A    C
ATOM    168  O   ALA   473     -20.241  18.741 -13.556  1.00 24.13      A    O
ATOM    169  N   ILE   474     -22.131  17.638 -13.012  1.00 24.89      A    N
ATOM    170  CA  ILE   474     -22.819  18.815 -12.489  1.00 25.52      A    C
ATOM    171  CB  ILE   474     -24.026  19.182 -13.365  1.00 29.25      A    C
ATOM    172  CG2 ILE   474     -24.883  20.220 -12.662  1.00 32.52      A    C
ATOM    173  CG1 ILE   474     -23.558  19.713 -14.721  1.00 33.35      A    C
ATOM    174  CD1 ILE   474     -22.979  21.105 -14.661  1.00 33.21      A    C
ATOM    175  C   ILE   474     -23.336  18.571 -11.069  1.00 26.48      A    C
ATOM    176  O   ILE   474     -24.055  17.603 -10.823  1.00 26.94      A    O
ATOM    177  N   ALA   475     -22.974  19.451 -10.140  1.00 25.26      A    N
ATOM    178  CA  ALA   475     -23.580  19.452  -8.811  1.00 25.92      A    C
ATOM    179  CB  ALA   475     -22.496  19.409  -7.732  1.00 23.88      A    C
ATOM    180  C   ALA   475     -24.459  20.695  -8.635  1.00 26.91      A    C
ATOM    181  O   ALA   475     -24.063  21.808  -8.998  1.00 25.49      A    O
ATOM    182  N   ARG   476     -25.655  20.490  -8.091  1.00 28.07      A    N
ATOM    183  CA  ARG   476     -26.642  21.558  -7.932  1.00 28.54      A    C
ATOM    184  CB  ARG   476     -27.883  21.299  -8.792  1.00 30.18      A    C
ATOM    185  CG  ARG   476     -27.672  21.375 -10.272  1.00 35.86      A    C
ATOM    186  CD  ARG   476     -29.005  21.304 -11.004  1.00 38.60      A    C
ATOM    187  NE  ARG   476     -28.838  21.409 -12.452  1.00 41.19      A    N
ATOM    188  CZ  ARG   476     -28.492  20.389 -13.231  1.00 43.32      A    C
ATOM    189  NH1 ARG   476     -28.277  19.191 -12.698  1.00 43.42      A    N
ATOM    190  NH2 ARG   476     -28.356  20.562 -14.538  1.00 44.05      A    N
ATOM    191  C   ARG   476     -27.093  21.615  -6.488  1.00 28.17      A    C
ATOM    192  O   ARG   476     -27.077  20.608  -5.783  1.00 27.75      A    O
ATOM    193  N   CYS   477     -27.519  22.797  -6.064  1.00 29.00      A    N
ATOM    194  CA  CYS   477     -28.103  22.979  -4.745  1.00 29.17      A    C
ATOM    195  C   CYS   477     -29.620  22.952  -4.848  1.00 30.65      A    C
ATOM    196  O   CYS   477     -30.173  23.016  -5.947  1.00 31.16      A    O
ATOM    197  CB  CYS   477     -27.664  24.316  -4.165  1.00 27.94      A    C
ATOM    198  SG  CYS   477     -25.866  24.479  -3.959  1.00 30.04      A    S
ATOM    199  N   ALA   478     -30.283  22.869  -3.699  1.00 30.57      A    N
ATOM    200  CA  ALA   478     -31.742  22.922  -3.643  1.00 31.86      A    C
ATOM    201  CB  ALA   478     -32.228  22.484  -2.260  1.00 29.25      A    C
ATOM    202  C   ALA   478     -32.240  24.333  -3.949  1.00 32.09      A    C
ATOM    203  O   ALA   478     -31.494  25.306  -3.847  1.00 31.96      A    O
ATOM    204  N   PRO   479     -33.521  24.461  -4.322  1.00 32.78      A    N
ATOM    205  CD  PRO   479     -34.502  23.383  -4.550  1.00 31.44      A    C
ATOM    206  CA  PRO   479     -34.054  25.778  -4.691  1.00 32.40      A    C
ATOM    207  CB  PRO   479     -35.515  25.486  -5.061  1.00 32.72      A    C
ATOM    208  CG  PRO   479     -35.513  24.037  -5.458  1.00 31.86      A    C
ATOM    209  C   PRO   479     -33.933  26.834  -3.592  1.00 32.60      A    C
ATOM    210  O   PRO   479     -33.819  28.022  -3.884  1.00 32.64      A    O
ATOM    211  N   ASP   480     -33.954  26.416  -2.331  1.00 31.47      A    N
ATOM    212  CA  ASP   480     -33.879  27.384  -1.241  1.00 33.46      A    C
ATOM    213  CB  ASP   480     -34.749  26.936  -0.057  1.00 35.16      A    C
ATOM    214  CG  ASP   480     -34.300  25.610   0.537  1.00 36.44      A    C
ATOM    215  OD1 ASP   480     -34.828  25.224   1.598  1.00 40.34      A    O
ATOM    216  OD2 ASP   480     -33.419  24.954  -0.053  1.00 38.40      A    O
ATOM    217  C   ASP   480     -32.449  27.623  -0.765  1.00 33.71      A    C
ATOM    218  O   ASP   480     -32.222  28.295   0.246  1.00 35.25      A    O
ATOM    219  N   GLU   481     -31.482  27.076  -1.492  1.00 32.10      A    N
ATOM    220  CA  GLU   481     -30.087  27.191  -1.086  1.00 30.90      A    C
ATOM    221  CB  GLU   481     -29.439  25.804  -1.016  1.00 30.17      A    C
ATOM    222  CG  GLU   481     -30.038  24.890   0.041  1.00 30.22      A    C
ATOM    223  CD  GLU   481     -29.692  23.425  -0.191  1.00 31.87      A    C
ATOM    224  OE1 GLU   481     -29.930  22.602   0.717  1.00 30.65      A    O
ATOM    225  OE2 GLU   481     -29.186  23.093  -1.285  1.00 33.77      A    O
ATOM    226  C   GLU   481     -29.292  28.073  -2.031  1.00 29.33      A    C
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ATOM    227  O   GLU   481     -29.723  28.354  -3.146  1.00 30.27      A    O
ATOM    228  N   GLU   482     -28.127  28.510  -1.569  1.00 29.51      A    N
ATOM    229  CA  GLU   482     -27.176  29.220  -2.411  1.00 29.75      A    C
ATOM    230  CB  GLU   482     -26.813  30.561  -1.777  1.00 30.90      A    C
ATOM    231  CG  GLU   482     -27.965  31.542  -1.682  1.00 35.54      A    C
ATOM    232  CD  GLU   482     -28.316  32.148  -3.031  1.00 38.85      A    C
ATOM    233  OE1 GLU   482     -27.426  32.200  -3.911  1.00 39.06      A    O
ATOM    234  OE2 GLU   482     -29.479  32.570  -3.212  1.00 39.52      A    O
ATOM    235  C   GLU   482     -25.915  28.372  -2.558  1.00 29.76      A    C
ATOM    236  O   GLU   482     -25.357  27.904  -1.569  1.00 28.44      A    O
ATOM    237  N   LEU   483     -25.464  28.176  -3.790  1.00 27.98      A    N
ATOM    238  CA  LEU   483     -24.174  27.546  -4.015  1.00 28.33      A    C
ATOM    239  CB  LEU   483     -24.101  26.996  -5.442  1.00 27.55      A    C
ATOM    240  CG  LEU   483     -22.796  26.296  -5.842  1.00 29.33      A    C
ATOM    241  CD1 LEU   483     -23.075  25.330  -6.976  1.00 29.06      A    C
ATOM    242  CD2 LEU   483     -21.746  27.326  -6.253  1.00 28.65      A    C
ATOM    243  C   LEU   483     -23.078  28.585  -3.793  1.00 28.13      A    C
ATOM    244  O   LEU   483     -22.993  29.566  -4.522  1.00 32.20      A    O
ATOM    245  N   LEU   484     -22.240  28.367  -2.789  1.00 27.32      A    N
ATOM    246  CA  LEU   484     -21.214  29.341  -2.437  1.00 26.58      A    C
ATOM    247  CB  LEU   484     -21.172  29.546  -0.916  1.00 25.53      A    C
ATOM    248  CG  LEU   484     -22.427  30.163  -0.281  1.00 27.36      A    C
ATOM    249  CD1 LEU   484     -22.065  30.781   1.072  1.00 27.53      A    C
ATOM    250  CD2 LEU   484     -23.013  31.234  -1.196  1.00 27.97      A    C
ATOM    251  C   LEU   484     -19.829  28.953  -2.943  1.00 27.62      A    C
ATOM    252  O   LEU   484     -18.926  29.793  -2.994  1.00 28.95      A    O
ATOM    253  N   SER   485     -19.655  27.688  -3.317  1.00 25.70      A    N
ATOM    254  CA  SER   485     -18.391  27.254  -3.908  1.00 27.74      A    C
ATOM    255  CB  SER   485     -17.304  27.106  -2.836  1.00 26.49      A    C
ATOM    256  OG  SER   485     -17.504  25.926  -2.068  1.00 28.56      A    O
ATOM    257  C   SER   485     -18.522  25.934  -4.664  1.00 27.50      A    C
ATOM    258  O   SER   485     -19.569  25.281  -4.643  1.00 25.09      A    O
ATOM    259  N   CYS   486     -17.432  25.548  -5.315  1.00 26.66      A    N
ATOM    260  CA  CYS   486     -17.457  24.490  -6.311  1.00 26.00      A    C
ATOM    261  C   CYS   486     -16.047  23.934  -6.434  1.00 26.11      A    C
ATOM    262  O   CYS   486     -15.097  24.677  -6.679  1.00 25.83      A    O
ATOM    263  CB  CYS   486     -17.932  25.090  -7.632  1.00 25.13      A    C
ATOM    264  SG  CYS   486     -17.774  24.120  -9.162  1.00 31.94      A    S
ATOM    265  N   SER   487     -15.912  22.628  -6.243  1.00 25.42      A    N
ATOM    266  CA  SER   487     -14.626  21.964  -6.403  1.00 24.57      A    C
ATOM    267  CB  SER   487     -14.031  21.612  -5.029  1.00 24.64      A    C
ATOM    268  OG  SER   487     -14.849  20.692  -4.324  1.00 27.88      A    O
ATOM    269  C   SER   487     -14.828  20.704  -7.237  1.00 23.91      A    C
ATOM    270  O   SER   487     -15.923  20.455  -7.734  1.00 22.75      A    O
ATOM    271  N   SER   488     -13.776  19.916  -7.408  1.00 24.08      A    N
ATOM    272  CA  SER   488     -13.883  18.706  -8.209  1.00 25.08      A    C
ATOM    273  CB  SER   488     -13.664  19.015  -9.698  1.00 27.25      A    C
ATOM    274  OG  SER   488     -12.416  19.654  -9.931  1.00 25.16      A    O
ATOM    275  C   SER   488     -12.864  17.693  -7.743  1.00 27.25      A    C
ATOM    276  O   SER   488     -11.940  18.027  -6.997  1.00 28.14      A    O
ATOM    277  N   PHE   489     -13.033  16.453  -8.182  1.00 26.11      A    N
ATOM    278  CA  PHE   489     -12.152  15.383  -7.757  1.00 26.68      A    C
ATOM    279  CB  PHE   489     -12.680  14.754  -6.462  1.00 26.29      A    C
ATOM    280  CG  PHE   489     -11.886  13.566  -5.992  1.00 28.17      A    C
ATOM    281  CD1 PHE   489     -10.732  13.738  -5.241  1.00 28.05      A    C
ATOM    282  CD2 PHE   489     -12.303  12.272  -6.291  1.00 28.40      A    C
ATOM    283  CE1 PHE   489     -10.004  12.637  -4.793  1.00 29.69      A    C
ATOM    284  CE2 PHE   489     -11.585  11.172  -5.849  1.00 29.13      A    C
ATOM    285  CZ  PHE   489     -10.434  11.354  -5.099  1.00 30.06      A    C
ATOM    286  C   PHE   489     -12.028  14.323  -8.837  1.00 27.40      A    C
ATOM    287  O   PHE   489     -13.009  13.951  -9.471  1.00 28.37      A    O
ATOM    288  N   SER   490     -10.807  13.846  -9.041  1.00 28.47      A    N
ATOM    289  CA  SER   490     -10.561  12.663  -9.853  1.00 30.35      A    C
ATOM    290  CB  SER   490      -9.863  13.056 -11.158  1.00 30.98      A    C
ATOM    291  OG  SER   490      -9.257  11.933 -11.776  1.00 33.81      A    O
ATOM    292  C   SER   490      -9.672  11.708  -9.066  1.00 31.89      A    C
ATOM    293  O   SER   490      -8.751  12.144  -8.378  1.00 32.56      A    O
ATOM    294  N   ARG   491      -9.941  10.412  -9.171  1.00 33.39      A    N
ATOM    295  CA  ARG   491      -9.110   9.402  -8.515  1.00 36.40      A    C
ATOM    296  CB  ARG   491      -9.709   8.007  -8.719  1.00 38.90      A    C
ATOM    297  CG  ARG   491     -11.109   7.848  -8.166  1.00 45.81      A    C
ATOM    298  CD  ARG   491     -11.268   6.514  -7.458  1.00 51.82      A    C
ATOM    299  NE  ARG   491     -12.322   6.565  -6.448  1.00 56.98      A    N
ATOM    300  CZ  ARG   491     -13.621   6.548  -6.731  1.00 58.08      A    C
ATOM    301  NH1 ARG   491     -14.518   6.597  -5.753  1.00 58.30      A    N
ATOM    302  NH2 ARG   491     -14.020   6.486  -7.995  1.00 57.04      A    N
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ATOM    303  C   ARG   491      -7.677   9.407  -9.050  1.00 35.22      A    C
ATOM    304  O   ARG   491      -6.731   9.192  -8.305  1.00 35.69      A    O
ATOM    305  N   SER   492      -7.533   9.654 -10.347  1.00 35.60      A    N
ATOM    306  CA  SER   492      -6.246   9.550 -11.024  1.00 34.80      A    C
ATOM    307  CB  SER   492      -6.459   9.060 -12.452  1.00 36.97      A    C
ATOM    308  OG  SER   492      -7.242   9.997 -13.179  1.00 38.02      A    O
ATOM    309  C   SER   492      -5.512  10.887 -11.068  1.00 35.54      A    C
ATOM    310  O   SER   492      -4.295  10.932 -11.258  1.00 36.68      A    O
ATOM    311  N   GLY   493      -6.254  11.977 -10.909  1.00 34.28      A    N
ATOM    312  CA  GLY   493      -5.654  13.292 -11.037  1.00 32.69      A    C
ATOM    313  C   GLY   493      -5.739  13.824 -12.456  1.00 31.91      A    C
ATOM    314  O   GLY   493      -5.287  14.929 -12.739  1.00 32.88      A    O
ATOM    315  N   LYS   494      -6.316  13.039 -13.357  1.00 31.63      A    N
ATOM    316  CA  LYS   494      -6.506  13.492 -14.728  1.00 32.29      A    C
ATOM    317  CB  LYS   494      -6.442  12.304 -15.693  1.00 34.42      A    C
ATOM    318  CG  LYS   494      -5.080  11.622 -15.758  1.00 38.00      A    C
ATOM    319  CD  LYS   494      -5.032  10.628 -16.909  1.00 39.72      A    C
ATOM    320  CE  LYS   494      -3.648  10.029 -17.078  1.00 42.01      A    C
ATOM    321  NZ  LYS   494      -3.585   9.143 -18.279  1.00 43.69      A    N
ATOM    322  C   LYS   494      -7.844  14.213 -14.870  1.00 29.91      A    C
ATOM    323  O   LYS   494      -8.870  13.604 -15.169  1.00 28.53      A    O
ATOM    324  N   ARG   495      -7.815  15.523 -14.659  1.00 29.57      A    N
ATOM    325  CA  ARG   495      -9.025  16.341 -14.669  1.00 28.53      A    C
ATOM    326  CB  ARG   495      -9.558  16.492 -13.243  1.00 29.81      A    C
ATOM    327  CG  ARG   495      -8.560  17.157 -12.306  1.00 31.40      A    C
ATOM    328  CD  ARG   495      -9.082  17.315 -10.881  1.00 32.62      A    C
ATOM    329  NE  ARG   495      -8.125  18.089 -10.096  1.00 34.88      A    N
ATOM    330  CZ  ARG   495      -8.424  19.180  -9.400  1.00 34.47      A    C
ATOM    331  NH1 ARG   495      -7.472  19.812  -8.733  1.00 35.19      A    N
ATOM    332  NH2 ARG   495      -9.672  19.633  -9.355  1.00 34.89      A    N
ATOM    333  C   ARG   495      -8.661  17.710 -15.225  1.00 27.43      A    C
ATOM    334  O   ARG   495      -7.486  18.039 -15.349  1.00 27.93      A    O
ATOM    335  N   ARG   496      -9.660  18.513 -15.564  1.00 26.03      A    N
ATOM    336  CA  ARG   496      -9.376  19.877 -15.972  1.00 24.54      A    C
ATOM    337  CB  ARG   496      -9.765  20.076 -17.436  1.00 24.73      A    C
ATOM    338  CG  ARG   496      -8.775  19.429 -18.396  1.00 26.29      A    C
ATOM    339  CD  ARG   496      -9.064  19.789 -19.843  1.00 25.61      A    C
ATOM    340  NE  ARG   496     -10.117  18.950 -20.405  1.00 24.57      A    N
ATOM    341  CZ  ARG   496     -10.601  19.095 -21.632  1.00 23.57      A    C
ATOM    342  NH1 ARG   496     -10.130  20.048 -22.429  1.00 20.57      A    N
ATOM    343  NH2 ARG   496     -11.555  18.287 -22.060  1.00 23.67      A    N
ATOM    344  C   ARG   496     -10.052  20.921 -15.084  1.00 25.65      A    C
ATOM    345  O   ARG   496     -10.266  22.062 -15.502  1.00 23.54      A    O
ATOM    346  N   GLY   497     -10.375  20.531 -13.853  1.00 25.25      A    N
ATOM    347  CA  GLY   497     -10.908  21.491 -12.900  1.00 25.50      A    C
ATOM    348  C   GLY   497     -12.406  21.709 -13.026  1.00 25.22      A    C
ATOM    349  O   GLY   497     -13.126  20.844 -13.524  1.00 24.92      A    O
ATOM    350  N   GLU   498     -12.880  22.867 -12.574  1.00 25.28      A    N
ATOM    351  CA  GLU   498     -14.313  23.099 -12.473  1.00 25.14      A    C
ATOM    352  CB  GLU   498     -14.840  22.589 -11.122  1.00 25.47      A    C
ATOM    353  CG  GLU   498     -14.497  23.467  -9.924  1.00 24.08      A    C
ATOM    354  CD  GLU   498     -13.039  23.373  -9.504  1.00 27.78      A    C
ATOM    355  OE1 GLU   498     -12.453  22.265  -9.526  1.00 27.03      A    O
ATOM    356  OE2 GLU   498     -12.477  24.419  -9.139  1.00 30.19      A    O
ATOM    357  C   GLU   498     -14.669  24.567 -12.640  1.00 26.49      A    C
ATOM    358  O   GLU   498     -13.817  25.445 -12.521  1.00 26.93      A    O
ATOM    359  N   ARG   499     -15.943  24.823 -12.911  1.00 27.54      A    N
ATOM    360  CA  ARG   499     -16.427  26.180 -13.122  1.00 27.29      A    C
ATOM    361  CB  ARG   499     -16.477  26.493 -14.615  1.00 27.26      A    C
ATOM    362  CG  ARG   499     -16.999  27.879 -14.936  1.00 31.36      A    C
ATOM    363  CD  ARG   499     -17.028  28.135 -16.438  1.00 29.97      A    C
ATOM    364  NE  ARG   499     -17.154  29.562 -16.717  1.00 33.21      A    N
ATOM    365  CZ  ARG   499     -16.543  30.183 -17.721  1.00 31.95      A    C
ATOM    366  NH1 ARG   499     -16.710  31.487 -17.898  1.00 33.98      A    N
ATOM    367  NH2 ARG   499     -15.767  29.498 -18.549  1.00 30.18      A    N
ATOM    368  C   ARG   499     -17.818  26.349 -12.526  1.00 28.46      A    C
ATOM    369  O   ARG   499     -18.652  25.445 -12.608  1.00 27.86      A    O
ATOM    370  N   MET   500     -18.062  27.507 -11.921  1.00 28.00      A    N
ATOM    371  CA  MET   500     -19.405  27.868 -11.492  1.00 28.68      A    C
ATOM    372  CB  MET   500     -19.339  28.774 -10.259  1.00 29.36      A    C
ATOM    373  CG  MET   500     -18.800  28.062  -9.033  1.00 31.43      A    C
ATOM    374  SD  MET   500     -18.596  29.123  -7.594  1.00 35.65      A    S
ATOM    375  CE  MET   500     -17.061  29.997  -8.031  1.00 30.13      A    C
ATOM    376  C   MET   500     -20.118  28.578 -12.633  1.00 28.47      A    C
ATOM    377  O   MET   500     -19.589  29.527 -13.213  1.00 27.47      A    O
ATOM    378  N   GLU   501     -21.314  28.106 -12.965  1.00 29.85      A    N
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ATOM    379  CA  GLU   501     -22.059  28.656 -14.093  1.00 32.67      A    C
ATOM    380  CB  GLU   501     -22.169  27.617 -15.222  1.00 30.99      A    C
ATOM    381  CG  GLU   501     -20.816  27.155 -15.771  1.00 32.75      A    C
ATOM    382  CD  GLU   501     -20.922  26.113 -16.886  1.00 32.72      A    C
ATOM    383  OE1 GLU   501     -21.997  25.503 -17.053  1.00 28.58      A    O
ATOM    384  OE2 GLU   501     -19.917  25.907 -17.603  1.00 36.53      A    O
ATOM    385  C   GLU   501     -23.446  29.079 -13.633  1.00 35.03      A    C
ATOM    386  O   GLU   501     -24.072  28.399 -12.823  1.00 33.00      A    O
ATOM    387  N   ALA   502     -23.919  30.210 -14.145  1.00 39.39      A    N
ATOM    388  CA  ALA   502     -25.231  30.722 -13.766  1.00 42.89      A    C
ATOM    389  CB  ALA   502     -25.258  32.240 -13.896  1.00 41.99      A    C
ATOM    390  C   ALA   502     -26.305  30.104 -14.647  1.00 46.27      A    C
ATOM    391  O   ALA   502     -26.267  30.243 -15.868  1.00 47.27      A    O
ATOM    392  N   GLN   503     -27.251  29.414 -14.015  1.00 49.35      A    N
ATOM    393  CA  GLN   503     -28.385  28.808 -14.707  1.00 53.23      A    C
ATOM    394  CB  GLN   503     -28.315  27.281 -14.636  1.00 53.57      A    C
ATOM    395  CG  GLN   503     -27.190  26.633 -15.425  1.00 56.31      A    C
ATOM    396  CD  GLN   503     -27.325  25.113 -15.471  1.00 56.99      A    C
ATOM    397  OE1 GLN   503     -28.338  24.555 -15.041  1.00 57.97      A    O
ATOM    398  NE2 GLN   503     -26.305  24.441 -15.991  1.00 56.50      A    N
ATOM    399  C   GLN   503     -29.683  29.256 -14.048  1.00 55.13      A    C
ATOM    400  O   GLN   503     -29.988  28.845 -12.927  1.00 56.06      A    O
ATOM    401  N   GLY   504     -30.449  30.091 -14.744  1.00 56.99      A    N
ATOM    402  CA  GLY   504     -31.757  30.473 -14.244  1.00 56.78      A    C
ATOM    403  C   GLY   504     -31.704  31.096 -12.863  1.00 56.53      A    C
ATOM    404  O   GLY   504     -32.463  30.711 -11.973  1.00 57.57      A    O
ATOM    405  N   GLY   505     -30.799  32.055 -12.680  1.00 55.20      A    N
ATOM    406  CA  GLY   505     -30.714  32.760 -11.416  1.00 53.52      A    C
ATOM    407  C   GLY   505     -29.851  32.064 -10.381  1.00 53.23      A    C
ATOM    408  O   GLY   505     -29.381  32.699  -9.437  1.00 53.62      A    O
ATOM    409  N   LYS   506     -29.638  30.762 -10.548  1.00 50.84      A    N
ATOM    410  CA  LYS   506     -28.827  29.998  -9.604  1.00 49.53      A    C
ATOM    411  CB  LYS   506     -29.567  28.722  -9.183  1.00 51.74      A    C
ATOM    412  CG  LYS   506     -30.536  28.905  -8.019  1.00 54.83      A    C
ATOM    413  CD  LYS   506     -31.603  29.954  -8.324  1.00 59.19      A    C
ATOM    414  CE  LYS   506     -32.608  30.090  -7.177  1.00 59.58      A    C
ATOM    415  NZ  LYS   506     -33.329  28.812  -6.895  1.00 58.69      A    N
ATOM    416  C   LYS   506     -27.464  29.627 -10.190  1.00 46.30      A    C
ATOM    417  O   LYS   506     -27.327  29.456 -11.397  1.00 46.29      A    O
ATOM    418  N   LEU   507     -26.459  29.504  -9.329  1.00 41.66      A    N
ATOM    419  CA  LEU   507     -25.161  28.990  -9.749  1.00 36.60      A    C
ATOM    420  CB  LEU   507     -24.042  29.594  -8.901  1.00 34.82      A    C
ATOM    421  CG  LEU   507     -23.892  31.114  -8.941  1.00 35.36      A    C
ATOM    422  CD1 LEU   507     -22.759  31.532  -8.016  1.00 35.13      A    C
ATOM    423  CD2 LEU   507     -23.625  31.576 -10.363  1.00 30.11      A    C
ATOM    424  C   LEU   507     -25.127  27.473  -9.623  1.00 34.72      A    C
ATOM    425  O   LEU   507     -25.651  26.910  -8.657  1.00 33.92      A    O
ATOM    426  N   VAL   508     -24.524  26.812 -10.607  1.00 31.44      A    N
ATOM    427  CA  VAL   508     -24.238  25.392 -10.492  1.00 29.22      A    C
ATOM    428  CB  VAL   508     -25.036  24.556 -11.505  1.00 31.89      A    C
ATOM    429  CG1 VAL   508     -26.513  24.933 -11.437  1.00 30.81      A    C
ATOM    430  CG2 VAL   508     -24.469  24.744 -12.895  1.00 29.53      A    C
ATOM    431  C   VAL   508     -22.761  25.132 -10.724  1.00 28.89      A    C
ATOM    432  O   VAL   508     -22.026  26.009 -11.192  1.00 26.64      A    O
ATOM    433  N   CYS   509     -22.344  23.913 -10.401  1.00 26.50      A    N
ATOM    434  CA  CYS   509     -20.943  23.519 -10.431  1.00 26.63      A    C
ATOM    435  C   CYS   509     -20.710  22.485 -11.523  1.00 26.83      A    C
ATOM    436  O   CYS   509     -21.233  21.372 -11.446  1.00 27.38      A    O
ATOM    437  CB  CYS   509     -20.572  22.924  -9.076  1.00 27.35      A    C
ATOM    438  SG  CYS   509     -18.841  22.425  -8.815  1.00 29.68      A    S
ATOM    439  N   ARG   510     -19.921  22.847 -12.530  1.00 26.66      A    N
ATOM    440  CA  ARG   510     -19.559  21.915 -13.600  1.00 25.83      A    C
ATOM    441  CB  ARG   510     -19.838  22.546 -14.973  1.00 24.38      A    C
ATOM    442  CG  ARG   510     -19.589  21.595 -16.148  1.00 26.06      A    C
ATOM    443  CD  ARG   510     -19.798  22.278 -17.504  1.00 24.80      A    C
ATOM    444  NE  ARG   510     -21.158  22.782 -17.661  1.00 25.36      A    N
ATOM    445  CZ  ARG   510     -22.193  22.037 -18.049  1.00 28.22      A    C
ATOM    446  NH1 ARG   510     -23.397  22.581 -18.166  1.00 26.65      A    N
ATOM    447  NH2 ARG   510     -22.028  20.747 -18.320  1.00 24.05      A    N
ATOM    448  C   ARG   510     -18.084  21.521 -13.518  1.00 25.64      A    C
ATOM    449  O   ARG   510     -17.207  22.389 -13.530  1.00 27.40      A    O
ATOM    450  N   ALA   511     -17.812  20.220 -13.439  1.00 24.50      A    N
ATOM    451  CA  ALA   511     -16.436  19.712 -13.462  1.00 23.75      A    C
ATOM    452  CB  ALA   511     -16.218  18.716 -12.321  1.00 23.65      A    C
ATOM    453  C   ALA   511     -16.131  19.033 -14.794  1.00 24.97      A    C
ATOM    454  O   ALA   511     -17.015  18.413 -15.387  1.00 23.22      A    O
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ATOM    455  N   HIS   512     -14.872  19.135 -15.233  1.00 24.16      A    N
ATOM    456  CA  HIS   512     -14.435  18.679 -16.559  1.00 24.87      A    C
ATOM    457  CB  HIS   512     -13.774  19.837 -17.323  1.00 25.25      A    C
ATOM    458  CG  HIS   512     -14.711  20.953 -17.660  1.00 25.82      A    C
ATOM    459  CD2 HIS   512     -14.982  22.115 -17.021  1.00 26.89      A    C
ATOM    460  ND1 HIS   512     -15.507  20.939 -18.785  1.00 27.87      A    N
ATOM    461  CE1 HIS   512     -16.229  22.046 -18.825  1.00 28.93      A    C
ATOM    462  NE2 HIS   512     -15.929  22.776 -17.766  1.00 30.14      A    N
ATOM    463  C   HIS   512     -13.440  17.518 -16.503  1.00 25.39      A    C
ATOM    464  O   HIS   512     -12.452  17.570 -15.762  1.00 24.51      A    O
ATOM    465  N   ASN   513     -13.688  16.491 -17.313  1.00 23.79      A    N
ATOM    466  CA  ASN   513     -12.757  15.378 -17.459  1.00 24.72      A    C
ATOM    467  CB  ASN   513     -13.447  14.196 -18.155  1.00 21.47      A    C
ATOM    468  CG  ASN   513     -12.676  12.888 -17.998  1.00 25.11      A    C
ATOM    469  OD1 ASN   513     -11.857  12.740 -17.087  1.00 26.09      A    O
ATOM    470  ND2 ASN   513     -12.943  11.927 -18.887  1.00 20.32      A    N
ATOM    471  C   ASN   513     -11.558  15.839 -18.285  1.00 23.06      A    C
ATOM    472  O   ASN   513     -11.572  16.930 -18.843  1.00 23.76      A    O
ATOM    473  N   ALA   514     -10.523  15.010 -18.359  1.00 23.46      A    N
ATOM    474  CA  ALA   514      -9.342  15.331 -19.170  1.00 24.44      A    C
ATOM    475  CB  ALA   514      -8.116  15.505 -18.268  1.00 21.96      A    C
ATOM    476  C   ALA   514      -9.066  14.247 -20.203  1.00 24.29      A    C
ATOM    477  O   ALA   514      -9.501  13.107 -20.041  1.00 24.54      A    O
ATOM    478  N   PHE   515      -8.340  14.608 -21.261  1.00 25.86      A    N
ATOM    479  CA  PHE   515      -7.806  13.632 -22.218  1.00 25.71      A    C
ATOM    480  CB  PHE   515      -6.761  14.313 -23.116  1.00 27.88      A    C
ATOM    481  CG  PHE   515      -6.124  13.397 -24.134  1.00 28.53      A    C
ATOM    482  CD1 PHE   515      -6.818  13.006 -25.270  1.00 29.33      A    C
ATOM    483  CD2 PHE   515      -4.827  12.936 -23.956  1.00 31.17      A    C
ATOM    484  CE1 PHE   515      -6.234  12.171 -26.216  1.00 30.11      A    C
ATOM    485  CE2 PHE   515      -4.231  12.098 -24.897  1.00 32.87      A    C
ATOM    486  CZ  PHE   515      -4.936  11.714 -26.030  1.00 30.57      A    C
ATOM    487  C   PHE   515      -7.170  12.473 -21.446  1.00 25.67      A    C
ATOM    488  O   PHE   515      -6.333  12.692 -20.570  1.00 25.88      A    O
ATOM    489  N   GLY   516      -7.589  11.247 -21.745  1.00 25.26      A    N
ATOM    490  CA  GLY   516      -6.993  10.089 -21.095  1.00 25.89      A    C
ATOM    491  C   GLY   516      -7.556   9.730 -19.725  1.00 28.02      A    C
ATOM    492  O   GLY   516      -7.309   8.634 -19.228  1.00 29.41      A    O
ATOM    493  N   GLY   517      -8.310  10.641 -19.112  1.00 27.77      A    N
ATOM    494  CA  GLY   517      -8.722  10.457 -17.727  1.00 28.63      A    C
ATOM    495  C   GLY   517      -9.944   9.571 -17.617  1.00 29.61      A    C
ATOM    496  O   GLY   517     -10.494   9.178 -18.629  1.00 29.48      A    O
ATOM    497  N   GLU   518     -10.385   9.246 -16.408  1.00 28.88      A    N
ATOM    498  CA  GLU   518     -11.479   8.292 -16.278  1.00 30.08      A    C
ATOM    499  CB  GLU   518     -11.096   7.152 -15.325  1.00 33.06      A    C
ATOM    500  CG  GLU   518     -10.923   7.562 -13.883  1.00 41.55      A    C
ATOM    501  CD  GLU   518      -9.561   8.160 -13.614  1.00 48.72      A    C
ATOM    502  OE1 GLU   518      -8.719   8.183 -14.546  1.00 50.19      A    O
ATOM    503  OE2 GLU   518      -9.332   8.607 -12.467  1.00 53.68      A    O
ATOM    504  C   GLU   518     -12.779   8.931 -15.818  1.00 28.72      A    C
ATOM    505  O   GLU   518     -13.720   8.233 -15.443  1.00 29.04      A    O
ATOM    506  N   GLY   519     -12.836  10.257 -15.862  1.00 26.44      A    N
ATOM    507  CA  GLY   519     -14.033  10.951 -15.430  1.00 25.94      A    C
ATOM    508  C   GLY   519     -13.808  11.639 -14.099  1.00 25.37      A    C
ATOM    509  O   GLY   519     -12.808  11.386 -13.429  1.00 24.07      A    O
ATOM    510  N   VAL   520     -14.738  12.507 -13.715  1.00 24.24      A    N
ATOM    511  CA  VAL   520     -14.545  13.374 -12.557  1.00 24.20      A    C
ATOM    512  CB  VAL   520     -14.047  14.770 -12.988  1.00 25.35      A    C
ATOM    513  CG1 VAL   520     -12.750  14.643 -13.781  1.00 23.64      A    C
ATOM    514  CG2 VAL   520     -15.114  15.454 -13.824  1.00 21.19      A    C
ATOM    515  C   VAL   520     -15.852  13.561 -11.800  1.00 24.80      A    C
ATOM    516  O   VAL   520     -16.920  13.207 -12.302  1.00 25.48      A    O
ATOM    517  N   TYR   521     -15.754  14.121 -10.596  1.00 23.24      A    N
ATOM    518  CA  TYR   521     -16.922  14.530  -9.821  1.00 23.59      A    C
ATOM    519  CB  TYR   521     -16.902  13.893  -8.430  1.00 24.30      A    C
ATOM    520  CG  TYR   521     -16.985  12.392  -8.457  1.00 26.30      A    C
ATOM    521  CD1 TYR   521     -15.833  11.620  -8.533  1.00 25.03      A    C
ATOM    522  CE1 TYR   521     -15.901  10.243  -8.597  1.00 29.75      A    C
ATOM    523  CD2 TYR   521     -18.216  11.746  -8.440  1.00 23.79      A    C
ATOM    524  CE2 TYR   521     -18.296  10.368  -8.505  1.00 28.16      A    C
ATOM    525  CZ  TYR   521     -17.133   9.624  -8.587  1.00 30.47      A    C
ATOM    526  OH  TYR   521     -17.196   8.259  -8.694  1.00 35.15      A    O
ATOM    527  C   TYR   521     -16.945  16.037  -9.650  1.00 23.08      A    C
ATOM    528  O   TYR   521     -15.898  16.666  -9.504  1.00 22.54      A    O
ATOM    529  N   ALA   522     -18.142  16.611  -9.660  1.00 23.04      A    N
ATOM    530  CA  ALA   522     -18.314  18.005  -9.283  1.00 22.28      A    C
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ATOM    531  CB  ALA   522     -19.336  18.685 -10.201  1.00 23.30      A    C
ATOM    532  C   ALA   522     -18.803  18.016  -7.843  1.00 23.52      A    C
ATOM    533  O   ALA   522     -19.561  17.132  -7.431  1.00 22.23      A    O
ATOM    534  N   ILE   523     -18.358  19.004  -7.074  1.00 23.74      A    N
ATOM    535  CA  ILE   523     -18.714  19.078  -5.665  1.00 23.56      A    C
ATOM    536  CB  ILE   523     -17.537  18.639  -4.779  1.00 26.23      A    C
ATOM    537  CG2 ILE   523     -17.959  18.618  -3.306  1.00 21.95      A    C
ATOM    538  CG1 ILE   523     -17.083  17.237  -5.193  1.00 24.93      A    C
ATOM    539  CD1 ILE   523     -15.614  17.139  -5.452  1.00 24.24      A    C
ATOM    540  C   ILE   523     -19.112  20.500  -5.303  1.00 26.24      A    C
ATOM    541  O   ILE   523     -18.282  21.408  -5.298  1.00 28.35      A    O
ATOM    542  N   ALA   524     -20.393  20.690  -5.013  1.00 24.72      A    N
ATOM    543  CA  ALA   524     -20.902  22.004  -4.658  1.00 24.50      A    C
ATOM    544  CB  ALA   524     -22.279  22.214  -5.295  1.00 23.50      A    C
ATOM    545  C   ALA   524     -20.999  22.141  -3.140  1.00 24.77      A    C
ATOM    546  O   ALA   524     -21.254  21.170  -2.435  1.00 26.27      A    O
ATOM    547  N   ARG   525     -20.784  23.352  -2.646  1.00 26.08      A    N
ATOM    548  CA  ARG   525     -21.076  23.684  -1.259  1.00 25.79      A    C
ATOM    549  CB  ARG   525     -19.931  24.513  -0.678  1.00 26.10      A    C
ATOM    550  CG  ARG   525     -19.969  24.682   0.825  1.00 27.35      A    C
ATOM    551  CD  ARG   525     -19.724  23.367   1.575  1.00 26.86      A    C
ATOM    552  NE  ARG   525     -19.572  23.634   3.001  1.00 26.08      A    N
ATOM    553  CZ  ARG   525     -19.631  22.720   3.963  1.00 28.22      A    C
ATOM    554  NH1 ARG   525     -19.480  23.097   5.225  1.00 24.72      A    N
ATOM    555  NH2 ARG   525     -19.838  21.436   3.671  1.00 28.59      A    N
ATOM    556  C   ARG   525     -22.374  24.492  -1.259  1.00 26.55      A    C
ATOM    557  O   ARG   525     -22.457  25.555  -1.877  1.00 27.38      A    O
ATOM    558  N   CYS   526     -23.393  23.973  -0.585  1.00 27.37      A    N
ATOM    559  CA  CYS   526     -24.727  24.557  -0.635  1.00 27.20      A    C
ATOM    560  C   CYS   526     -25.155  25.053   0.749  1.00 28.67      A    C
ATOM    561  O   CYS   526     -25.183  24.282   1.709  1.00 27.15      A    O
ATOM    562  CB  CYS   526     -25.722  23.512  -1.124  1.00 28.62      A    C
ATOM    563  SG  CYS   526     -25.404  22.884  -2.801  1.00 28.40      A    S
ATOM    564  N   CYS   527     -25.496  26.333   0.850  1.00 27.75      A    N
ATOM    565  CA  CYS   527     -25.764  26.923   2.153  1.00 30.68      A    C
ATOM    566  C   CYS   527     -27.111  27.637   2.230  1.00 30.03      A    C
ATOM    567  O   CYS   527     -27.672  28.049   1.213  1.00 29.33      A    O
ATOM    568  CB  CYS   527     -24.653  27.907   2.519  1.00 30.20      A    C
ATOM    569  SG  CYS   527     -22.945  27.315   2.258  1.00 34.88      A    S
ATOM    570  N   LEU   528     -27.626  27.777   3.448  1.00 31.45      A    N
ATOM    571  CA  LEU   528     -28.801  28.604   3.688  1.00 33.88      A    C
ATOM    572  CB  LEU   528     -29.615  28.058   4.862  1.00 31.33      A    C
ATOM    573  CG  LEU   528     -30.103  26.630   4.633  1.00 31.88      A    C
ATOM    574  CD1 LEU   528     -30.984  26.179   5.793  1.00 28.76      A    C
ATOM    575  CD2 LEU   528     -30.858  26.576   3.317  1.00 29.32      A    C
ATOM    576  C   LEU   528     -28.361  30.026   3.979  1.00 36.14      A    C
ATOM    577  O   LEU   528     -27.762  30.311   5.014  1.00 36.49      A    O
ATOM    578  N   LEU   529     -28.652  30.914   3.042  1.00 40.20      A    N
ATOM    579  CA  LEU   529     -28.208  32.292   3.135  1.00 45.03      A    C
ATOM    580  CB  LEU   529     -26.956  32.491   2.272  1.00 43.96      A    C
ATOM    581  CG  LEU   529     -26.141  33.767   2.499  1.00 45.14      A    C
ATOM    582  CD1 LEU   529     -25.404  33.667   3.822  1.00 45.34      A    C
ATOM    583  CD2 LEU   529     -25.146  33.956   1.368  1.00 45.47      A    C
ATOM    584  C   LEU   529     -29.348  33.181   2.638  1.00 48.10      A    C
ATOM    585  O   LEU   529     -29.527  33.369   1.431  1.00 48.79      A    O
ATOM    586  N   PRO   530     -30.144  33.726   3.570  1.00 48.91      A    N
ATOM    587  CD  PRO   530     -29.972  33.547   5.021  1.00 48.98      A    C
ATOM    588  CA  PRO   530     -31.254  34.638   3.259  1.00 50.42      A    C
ATOM    589  CB  PRO   530     -31.955  34.819   4.603  1.00 49.24      A    C
ATOM    590  CG  PRO   530     -30.872  34.610   5.604  1.00 50.12      A    C
ATOM    591  C   PRO   530     -30.773  35.972   2.687  1.00 49.69      A    C
ATOM    592  O   PRO   530     -29.729  36.488   3.080  1.00 48.57      A    O
ATOM    593  N   GLN   531     -31.544  36.527   1.759  1.00 52.50      A    N
ATOM    594  CA  GLN   531     -31.225  37.830   1.182  1.00 54.58      A    C
ATOM    595  CB  GLN   531     -31.325  38.929   2.247  1.00 57.89      A    C
ATOM    596  CG  GLN   531     -32.722  39.160   2.811  1.00 62.33      A    C
ATOM    597  CD  GLN   531     -32.754  40.294   3.831  1.00 65.19      A    C
ATOM    598  OE1 GLN   531     -32.220  41.381   3.590  1.00 66.51      A    O
ATOM    599  NE2 GLN   531     -33.378  40.043   4.978  1.00 64.89      A    N
ATOM    600  C   GLN   531     -29.820  37.843   0.586  1.00 53.73      A    C
ATOM    601  O   GLN   531     -29.021  38.734   0.882  1.00 54.88      A    O
ATOM    602  N   ALA   532     -29.518  36.858  -0.250  1.00 50.22      A    N
ATOM    603  CA  ALA   532     -28.234  36.828  -0.933  1.00 48.20      A    C
ATOM    604  CB  ALA   532     -27.514  35.525  -0.626  1.00 46.39      A    C
ATOM    605  C   ALA   532     -28.404  36.991  -2.443  1.00 47.17      A    C
ATOM    606  O   ALA   532     -29.324  36.432  -3.043  1.00 45.39      A    O
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ATOM    607  N   ASN  533     -27.520  37.772  -3.052  1.00 46.61      A    N
ATOM    608  CA  ASN  533     -27.359  37.735  -4.500  1.00 45.24      A    C
ATOM    609  CB  ASN  533     -27.689  39.097  -5.130  1.00 48.68      A    C
ATOM    610  CG  ASN  533     -27.745  39.039  -6.657  1.00 52.76      A    C
ATOM    611  OD1 ASN  533     -27.459  38.001  -7.259  1.00 55.43      A    O
ATOM    612  ND2 ASN  533     -28.117  40.154  -7.286  1.00 54.40      A    N
ATOM    613  C   ASN  533     -25.910  37.372  -4.781  1.00 42.36      A    C
ATOM    614  O   ASN  533     -25.004  38.166  -4.540  1.00 41.25      A    O
ATOM    615  N   CYS  534     -25.694  36.162  -5.278  1.00 40.03      A    N
ATOM    616  CA  CYS  534     -24.346  35.706  -5.572  1.00 38.85      A    C
ATOM    617  C   CYS  534     -24.139  35.637  -7.076  1.00 38.60      A    C
ATOM    618  O   CYS  534     -25.031  35.215  -7.812  1.00 38.28      A    O
ATOM    619  CB  CYS  534     -24.104  34.322  -4.980  1.00 38.71      A    C
ATOM    620  SG  CYS  534     -24.229  34.143  -3.170  1.00 39.44      A    S
ATOM    621  N   SER  535     -22.956  36.040  -7.525  1.00 35.57      A    N
ATOM    622  CA  SER  535     -22.642  36.029  -8.943  1.00 35.87      A    C
ATOM    623  CB  SER  535     -22.807  37.438  -9.523  1.00 34.93      A    C
ATOM    624  OG  SER  535     -22.034  38.375  -8.795  1.00 37.31      A    O
ATOM    625  C   SER  535     -21.220  35.528  -9.168  1.00 34.87      A    C
ATOM    626  O   SER  535     -20.364  35.643  -8.287  1.00 34.76      A    O
ATOM    627  N   VAL  536     -20.975  34.966 -10.347  1.00 32.81      A    N
ATOM    628  CA  VAL  536     -19.659  34.444 -10.681  1.00 32.05      A    C
ATOM    629  CB  VAL  536     -19.752  33.158 -11.524  1.00 33.02      A    C
ATOM    630  CG1 VAL  536     -18.353  32.630 -11.817  1.00 31.62      A    C
ATOM    631  CG2 VAL  536     -20.555  32.116 -10.787  1.00 37.22      A    C
ATOM    632  C   VAL  536     -18.871  35.465 -11.479  1.00 32.35      A    C
ATOM    633  O   VAL  536     -19.395  36.083 -12.406  1.00 32.68      A    O
ATOM    634  N   HIS  537     -17.603  35.631 -11.129  1.00 32.15      A    N
ATOM    635  CA  HIS  537     -16.743  36.550 -11.854  1.00 32.62      A    C
ATOM    636  CB  HIS  537     -16.430  37.757 -10.974  1.00 32.90      A    C
ATOM    637  CG  HIS  537     -17.657  38.492 -10.534  1.00 38.48      A    C
ATOM    638  CD2 HIS  537     -18.536  38.238  -9.534  1.00 39.02      A    C
ATOM    639  ND1 HIS  537     -18.153  39.587 -11.211  1.00 39.06      A    N
ATOM    640  CE1 HIS  537     -19.285  39.973 -10.650  1.00 40.38      A    C
ATOM    641  NE2 HIS  537     -19.540  39.171  -9.630  1.00 41.12      A    N
ATOM    642  C   HIS  537     -15.482  35.829 -12.268  1.00 31.22      A    C
ATOM    643  O   HIS  537     -14.825  35.197 -11.446  1.00 32.87      A    O
ATOM    644  N   THR  538     -15.160  35.923 -13.553  1.00 30.02      A    N
ATOM    645  CA  THR  538     -14.130  35.092 -14.162  1.00 28.85      A    C
ATOM    646  CB  THR  538     -14.745  34.189 -15.259  1.00 30.20      A    C
ATOM    647  OG1 THR  538     -15.658  33.264 -14.652  1.00 29.62      A    O
ATOM    648  CG2 THR  538     -13.658  33.417 -16.011  1.00 26.80      A    C
ATOM    649  C   THR  538     -13.027  35.934 -14.786  1.00 27.41      A    C
ATOM    650  O   THR  538     -13.290  37.001 -15.330  1.00 26.94      A    O
ATOM    651  N   ALA  539     -11.793  35.453 -14.704  1.00 26.67      A    N
ATOM    652  CA  ALA  539     -10.713  36.017 -15.502  1.00 26.84      A    C
ATOM    653  CB  ALA  539      -9.722  36.757 -14.617  1.00 27.43      A    C
ATOM    654  C   ALA  539     -10.010  34.901 -16.258  1.00 27.34      A    C
ATOM    655  O   ALA  539      -9.800  33.806 -15.727  1.00 29.03      A    O
ATOM    656  N   PRO  540      -9.645  35.168 -17.518  1.00 25.34      A    N
ATOM    657  CD  PRO  540      -9.835  36.482 -18.162  1.00 26.40      A    C
ATOM    658  CA  PRO  540      -9.058  34.190 -18.434  1.00 25.56      A    C
ATOM    659  CB  PRO  540      -9.227  34.841 -19.804  1.00 25.71      A    C
ATOM    660  CG  PRO  540      -9.165  36.312 -19.505  1.00 27.40      A    C
ATOM    661  C   PRO  540      -7.595  33.907 -18.126  1.00 27.52      A    C
ATOM    662  O   PRO  540      -6.923  34.699 -17.463  1.00 27.04      A    O
ATOM    663  N   PRO  541      -7.075  32.783 -18.636  1.00 27.53      A    N
ATOM    664  CD  PRO  541      -7.795  31.778 -19.435  1.00 28.31      A    C
ATOM    665  CA  PRO  541      -5.650  32.469 -18.522  1.00 29.94      A    C
ATOM    666  CB  PRO  541      -5.458  31.318 -19.510  1.00 26.51      A    C
ATOM    667  CG  PRO  541      -6.794  30.658 -19.562  1.00 28.03      A    C
ATOM    668  C   PRO  541      -4.788  33.676 -18.875  1.00 32.23      A    C
ATOM    669  O   PRO  541      -5.053  34.382 -19.848  1.00 30.35      A    O
ATOM    670  N   ALA  542      -3.759  33.910 -18.070  1.00 35.43      A    N
ATOM    671  CA  ALA  542      -2.864  35.034 -18.290  1.00 39.68      A    C
ATOM    672  CB  ALA  542      -3.169  36.142 -17.298  1.00 41.32      A    C
ATOM    673  C   ALA  542      -1.429  34.572 -18.125  1.00 41.82      A    C
ATOM    674  O   ALA  542      -1.077  33.982 -17.108  1.00 43.83      A    O
ATOM    675  N   GLU  543      -0.603  34.838 -19.125  1.00 44.83      A    N
ATOM    676  CA  GLU  543       0.816  34.523 -19.033  1.00 48.00      A    C
ATOM    677  CB  GLU  543       1.461  34.625 -20.418  1.00 52.56      A    C
ATOM    678  CG  GLU  543       2.492  33.547 -20.715  1.00 57.96      A    C
ATOM    679  CD  GLU  543       1.858  32.227 -21.120  1.00 61.23      A    C
ATOM    680  OE1 GLU  543       1.824  31.303 -20.277  1.00 62.99      A    O
ATOM    681  OE2 GLU  543       1.396  32.113 -22.283  1.00 63.66      A    O
ATOM    682  C   GLU  543       1.463  35.530 -18.082  1.00 47.94      A    C
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ATOM    683  O   GLU   543       2.038  36.525 -18.520  1.00 49.36      A    O
ATOM    684  N   ALA   544       1.359  35.274 -16.781  1.00 45.85      A    N
ATOM    685  CA  ALA   544       1.827  36.223 -15.780  1.00 43.79      A    C
ATOM    686  CB  ALA   544       0.678  37.126 -15.346  1.00 42.96      A    C
ATOM    687  C   ALA   544       2.418  35.508 -14.564  1.00 44.20      A    C
ATOM    688  O   ALA   544       1.998  34.402 -14.210  1.00 42.82      A    O
ATOM    689  N   SER   545       3.392  36.148 -13.926  1.00 43.11      A    N
ATOM    690  CA  SER   545       4.054  35.566 -12.767  1.00 42.80      A    C
ATOM    691  CB  SER   545       5.198  36.469 -12.297  1.00 44.06      A    C
ATOM    692  OG  SER   545       6.381  36.204 -13.028  1.00 49.18      A    O
ATOM    693  C   SER   545       3.082  35.350 -11.621  1.00 40.42      A    C
ATOM    694  O   SER   545       3.159  34.344 -10.917  1.00 41.59      A    O
ATOM    695  N   MET   546       2.171  36.297 -11.435  1.00 37.26      A    N
ATOM    696  CA  MET   546       1.224  36.224 -10.337  1.00 37.49      A    C
ATOM    697  CB  MET   546       0.851  37.631  -9.869  1.00 36.04      A    C
ATOM    698  CG  MET   546       1.973  38.326  -9.119  1.00 37.71      A    C
ATOM    699  SD  MET   546       1.626  40.049  -8.851  1.00 38.80      A    S
ATOM    700  CE  MET   546       2.137  40.710 -10.406  1.00 47.70      A    C
ATOM    701  C   MET   546      -0.028  35.451 -10.718  1.00 37.16      A    C
ATOM    702  O   MET   546      -1.076  35.596 -10.083  1.00 37.19      A    O
ATOM    703  N   GLY   547       0.091  34.630 -11.757  1.00 36.79      A    N
ATOM    704  CA  GLY   547      -0.994  33.747 -12.136  1.00 35.87      A    C
ATOM    705  C   GLY   547      -2.212  34.481 -12.659  1.00 36.73      A    C
ATOM    706  O   GLY   547      -2.119  35.599 -13.168  1.00 36.47      A    O
ATOM    707  N   THR   548      -3.366  33.840 -12.536  1.00 35.43      A    N
ATOM    708  CA  THR   548      -4.617  34.407 -13.017  1.00 35.74      A    C
ATOM    709  CB  THR   548      -5.403  33.365 -13.841  1.00 37.13      A    C
ATOM    710  OG1 THR   548      -4.580  32.892 -14.914  1.00 39.98      A    O
ATOM    711  CG2 THR   548      -6.664  33.976 -14.416  1.00 38.25      A    C
ATOM    712  C   THR   548      -5.442  34.817 -11.808  1.00 34.88      A    C
ATOM    713  O   THR   548      -5.597  34.041 -10.866  1.00 36.02      A    O
ATOM    714  N   ARG   549      -5.971  36.033 -11.831  1.00 33.45      A    N
ATOM    715  CA  ARG   549      -6.562  36.607 -10.632  1.00 34.68      A    C
ATOM    716  CB  ARG   549      -5.574  37.580  -9.975  1.00 34.64      A    C
ATOM    717  CG  ARG   549      -4.158  37.005  -9.856  1.00 37.46      A    C
ATOM    718  CD  ARG   549      -3.155  38.035  -9.350  1.00 35.98      A    C
ATOM    719  NE  ARG   549      -3.201  38.159  -7.901  1.00 35.43      A    N
ATOM    720  CZ  ARG   549      -2.454  37.440  -7.069  1.00 34.21      A    C
ATOM    721  NH1 ARG   549      -2.566  37.618  -5.760  1.00 30.15      A    N
ATOM    722  NH2 ARG   549      -1.593  36.545  -7.546  1.00 32.58      A    N
ATOM    723  C   ARG   549      -7.859  37.329 -10.947  1.00 34.29      A    C
ATOM    724  O   ARG   549      -7.990  37.968 -11.986  1.00 34.98      A    O
ATOM    725  N   VAL   550      -8.818  37.221 -10.040  1.00 33.25      A    N
ATOM    726  CA  VAL   550     -10.054  37.970 -10.147  1.00 33.71      A    C
ATOM    727  CB  VAL   550     -11.130  37.161 -10.914  1.00 33.51      A    C
ATOM    728  CG1 VAL   550     -11.547  35.936 -10.103  1.00 30.56      A    C
ATOM    729  CG2 VAL   550     -12.329  38.043 -11.222  1.00 32.51      A    C
ATOM    730  C   VAL   550     -10.530  38.244  -8.727  1.00 36.76      A    C
ATOM    731  O   VAL   550     -10.261  37.460  -7.812  1.00 36.18      A    O
ATOM    732  N   HIS   551     -11.222  39.358  -8.530  1.00 38.93      A    N
ATOM    733  CA  HIS   551     -11.719  39.683  -7.200  1.00 43.33      A    C
ATOM    734  CB  HIS   551     -10.779  40.675  -6.506  1.00 46.64      A    C
ATOM    735  CG  HIS   551     -10.856  42.067  -7.050  1.00 52.46      A    C
ATOM    736  CD2 HIS   551     -10.404  42.597  -8.212  1.00 54.58      A    C
ATOM    737  ND1 HIS   551     -11.460  43.101  -6.365  1.00 54.96      A    N
ATOM    738  CE1 HIS   551     -11.377  44.208  -7.082  1.00 56.62      A    C
ATOM    739  NE2 HIS   551     -10.741  43.930  -8.207  1.00 57.00      A    N
ATOM    740  C   HIS   551     -13.128  40.256  -7.262  1.00 43.49      A    C
ATOM    741  O   HIS   551     -13.585  40.702  -8.313  1.00 42.88      A    O
ATOM    742  N   CYS   552     -13.815  40.229  -6.128  1.00 44.34      A    N
ATOM    743  CA  CYS   552     -15.158  40.771  -6.045  1.00 47.65      A    C
ATOM    744  C   CYS   552     -15.074  42.292  -5.943  1.00 51.08      A    C
ATOM    745  O   CYS   552     -14.612  42.830  -4.937  1.00 50.38      A    O
ATOM    746  CB  CYS   552     -15.875  40.193  -4.824  1.00 44.92      A    C
ATOM    747  SG  CYS   552     -15.982  38.371  -4.816  1.00 44.45      A    S
ATOM    748  N   HIS   553     -15.518  42.979  -6.990  1.00 55.41      A    N
ATOM    749  CA  HIS   553     -15.266  44.410  -7.120  1.00 60.41      A    C
ATOM    750  CB  HIS   553     -14.882  44.748  -8.565  1.00 63.13      A    C
ATOM    751  CG  HIS   553     -15.927  44.379  -9.572  1.00 68.52      A    C
ATOM    752  CD2 HIS   553     -16.781  45.144 -10.294  1.00 70.80      A    C
ATOM    753  ND1 HIS   553     -16.187  43.073  -9.932  1.00 71.80      A    N
ATOM    754  CE1 HIS   553     -17.155  43.049 -10.831  1.00 71.80      A    C
ATOM    755  NE2 HIS   553     -17.533  44.293 -11.068  1.00 72.09      A    N
ATOM    756  C   HIS   553     -16.442  45.282  -6.685  1.00 60.90      A    C
ATOM    757  O   HIS   553     -16.292  46.491  -6.524  1.00 62.29      A    O
ATOM    758  N   GLN   554     -17.609  44.677  -6.497  1.00 61.02      A    N
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ATOM	759	CA	GLN	554	-18.792	45.442	-6.120	1.00	61.69	A	C
ATOM	760	CB	GLN	554	-20.062	44.695	-6.527	1.00	62.40	A	C
ATOM	761	CG	GLN	554	-20.209	44.514	-8.030	1.00	64.68	A	C
ATOM	762	CD	GLN	554	-21.646	44.278	-8.452	1.00	66.14	A	C
ATOM	763	OE1	GLN	554	-22.313	43.371	-7.952	1.00	66.12	A	O
ATOM	764	NE2	GLN	554	-22.133	45.100	-9.379	1.00	66.69	A	N
ATOM	765	C	GLN	554	-18.831	45.747	-4.628	1.00	61.75	A	C
ATOM	766	O	GLN	554	-18.285	45.002	-3.813	1.00	61.46	A	O
ATOM	767	N	GLN	555	-19.488	46.850	-4.281	1.00	61.73	A	N
ATOM	768	CA	GLN	555	-19.517	47.338	-2.907	1.00	61.26	A	C
ATOM	769	CB	GLN	555	-20.092	48.756	-2.869	1.00	64.04	A	C
ATOM	770	CG	GLN	555	-19.903	49.452	-1.534	1.00	67.91	A	C
ATOM	771	CD	GLN	555	-18.440	49.524	-1.132	1.00	71.48	A	C
ATOM	772	OE1	GLN	555	-17.700	50.401	-1.586	1.00	73.49	A	O
ATOM	773	NE2	GLN	555	-18.012	48.595	-0.279	1.00	71.05	A	N
ATOM	774	C	GLN	555	-20.336	46.437	-1.984	1.00	59.47	A	C
ATOM	775	O	GLN	555	-21.532	46.235	-2.199	1.00	58.75	A	O
ATOM	776	N	GLY	556	-19.683	45.907	-0.953	1.00	57.33	A	N
ATOM	777	CA	GLY	556	-20.378	45.081	0.019	1.00	55.06	A	C
ATOM	778	C	GLY	556	-20.304	43.591	-0.268	1.00	53.72	A	C
ATOM	779	O	GLY	556	-20.687	42.770	0.566	1.00	53.32	A	O
ATOM	780	N	HIS	557	-19.809	43.233	-1.446	1.00	51.42	A	N
ATOM	781	CA	HIS	557	-19.772	41.834	-1.841	1.00	49.50	A	C
ATOM	782	CB	HIS	557	-19.655	41.721	-3.367	1.00	51.95	A	C
ATOM	783	CG	HIS	557	-20.930	42.035	-4.092	1.00	56.53	A	C
ATOM	784	CD2	HIS	557	-21.535	41.427	-5.141	1.00	56.76	A	C
ATOM	785	ND1	HIS	557	-21.752	43.085	-3.733	1.00	57.67	A	N
ATOM	786	CE1	HIS	557	-22.807	43.110	-4.528	1.00	55.39	A	C
ATOM	787	NE2	HIS	557	-22.700	42.115	-5.391	1.00	58.10	A	N
ATOM	788	C	HIS	557	-18.633	41.089	-1.151	1.00	45.78	A	C
ATOM	789	O	HIS	557	-17.560	41.647	-0.920	1.00	45.56	A	O
ATOM	790	N	VAL	558	-18.892	39.829	-0.812	1.00	41.36	A	N
ATOM	791	CA	VAL	558	-17.934	38.982	-0.108	1.00	37.02	A	C
ATOM	792	CB	VAL	558	-18.500	38.521	1.244	1.00	37.11	A	C
ATOM	793	CG1	VAL	558	-17.454	37.737	1.998	1.00	37.46	A	C
ATOM	794	CG2	VAL	558	-18.964	39.721	2.050	1.00	39.30	A	C
ATOM	795	C	VAL	558	-17.628	37.736	-0.930	1.00	35.05	A	C
ATOM	796	O	VAL	558	-18.538	37.112	-1.475	1.00	34.44	A	O
ATOM	797	N	LEU	559	-16.351	37.373	-1.009	1.00	33.22	A	N
ATOM	798	CA	LEU	559	-15.934	36.175	-1.732	1.00	31.06	A	C
ATOM	799	CB	LEU	559	-14.440	36.250	-2.039	1.00	29.73	A	C
ATOM	800	CG	LEU	559	-13.822	34.965	-2.596	1.00	29.66	A	C
ATOM	801	CD1	LEU	559	-14.328	34.731	-4.025	1.00	27.03	A	C
ATOM	802	CD2	LEU	559	-12.300	35.079	-2.575	1.00	28.88	A	C
ATOM	803	C	LEU	559	-16.220	34.929	-0.892	1.00	31.01	A	C
ATOM	804	O	LEU	559	-15.760	34.829	0.245	1.00	31.89	A	O
ATOM	805	N	THR	560	-16.976	33.984	-1.447	1.00	28.29	A	N
ATOM	806	CA	THR	560	-17.335	32.777	-0.707	1.00	27.77	A	C
ATOM	807	CB	THR	560	-18.862	32.532	-0.728	1.00	27.86	A	C
ATOM	808	OG1	THR	560	-19.302	32.333	-2.080	1.00	29.50	A	O
ATOM	809	CG2	THR	560	-19.602	33.721	-0.117	1.00	24.95	A	C
ATOM	810	C	THR	560	-16.649	31.518	-1.234	1.00	27.81	A	C
ATOM	811	O	THR	560	-16.592	30.505	-0.544	1.00	27.32	A	O
ATOM	812	N	GLY	561	-16.149	31.579	-2.465	1.00	28.51	A	N
ATOM	813	CA	GLY	561	-15.529	30.415	-3.067	1.00	26.65	A	C
ATOM	814	C	GLY	561	-14.728	30.746	-4.312	1.00	28.04	A	C
ATOM	815	O	GLY	561	-15.044	31.696	-5.035	1.00	29.85	A	O
ATOM	816	N	CYS	562	-13.684	29.960	-4.555	1.00	26.78	A	N
ATOM	817	CA	CYS	562	-12.860	30.109	-5.745	1.00	28.08	A	C
ATOM	818	C	CYS	562	-12.868	28.802	-6.535	1.00	28.91	A	C
ATOM	819	O	CYS	562	-12.698	27.725	-5.965	1.00	29.35	A	O
ATOM	820	CB	CYS	562	-11.414	30.444	-5.358	1.00	29.31	A	C
ATOM	821	SG	CYS	562	-11.177	32.043	-4.523	1.00	30.67	A	S
ATOM	822	N	SER	563	-13.060	28.903	-7.845	1.00	27.63	A	N
ATOM	823	CA	SER	563	-12.994	27.741	-8.721	1.00	27.76	A	C
ATOM	824	CB	SER	563	-14.372	27.442	-9.321	1.00	25.87	A	C
ATOM	825	OG	SER	563	-15.267	26.932	-8.341	1.00	29.15	A	O
ATOM	826	C	SER	563	-11.991	27.990	-9.839	1.00	27.56	A	C
ATOM	827	O	SER	563	-11.673	29.137	-10.157	1.00	28.34	A	O
ATOM	828	N	SER	564	-11.506	26.912	-10.440	1.00	26.93	A	N
ATOM	829	CA	SER	564	-10.543	27.014	-11.531	1.00	28.10	A	C
ATOM	830	CB	SER	564	-9.121	27.017	-10.960	1.00	28.82	A	C
ATOM	831	OG	SER	564	-8.171	27.330	-11.957	1.00	33.70	A	O
ATOM	832	C	SER	564	-10.697	25.845	-12.502	1.00	26.61	A	C
ATOM	833	O	SER	564	-10.767	24.693	-12.083	1.00	27.41	A	O
ATOM	834	N	HIS	565	-10.744	26.139	-13.797	1.00	26.38	A	N

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ATOM    835  CA  HIS   565     -10.647  25.098 -14.814  1.00 24.40      A    C
ATOM    836  CB  HIS   565     -11.995  24.894 -15.510  1.00 23.27      A    C
ATOM    837  CG  HIS   565     -12.271  25.882 -16.603  1.00 24.99      A    C
ATOM    838  CD2 HIS   565     -12.022  25.831 -17.934  1.00 25.30      A    C
ATOM    839  ND1 HIS   565     -12.881  27.096 -16.375  1.00 25.00      A    N
ATOM    840  CE1 HIS   565     -12.994  27.752 -17.517  1.00 26.14      A    C
ATOM    841  NE2 HIS   565     -12.480  27.006 -18.479  1.00 24.33      A    N
ATOM    842  C   HIS   565      -9.589  25.467 -15.850  1.00 24.48      A    C
ATOM    843  O   HIS   565      -9.282  26.640 -16.046  1.00 25.19      A    O
ATOM    844  N   TRP   566      -9.029  24.463 -16.511  1.00 24.82      A    N
ATOM    845  CA  TRP   566      -8.034  24.710 -17.547  1.00 25.49      A    C
ATOM    846  CB  TRP   566      -6.618  24.503 -16.989  1.00 23.96      A    C
ATOM    847  CG  TRP   566      -6.428  23.185 -16.298  1.00 24.74      A    C
ATOM    848  CD2 TRP   566      -6.786  22.864 -14.944  1.00 24.42      A    C
ATOM    849  CE2 TRP   566      -6.434  21.519 -14.729  1.00 23.95      A    C
ATOM    850  CE3 TRP   566      -7.369  23.586 -13.896  1.00 25.18      A    C
ATOM    851  CD1 TRP   566      -5.886  22.051 -16.828  1.00 23.05      A    C
ATOM    852  NE1 TRP   566      -5.887  21.046 -15.894  1.00 23.71      A    N
ATOM    853  CZ2 TRP   566      -6.648  20.877 -13.508  1.00 25.70      A    C
ATOM    854  CZ3 TRP   566      -7.578  22.951 -12.688  1.00 24.87      A    C
ATOM    855  CH2 TRP   566      -7.220  21.608 -12.503  1.00 25.51      A    C
ATOM    856  C   TRP   566      -8.267  23.796 -18.746  1.00 25.03      A    C
ATOM    857  O   TRP   566      -8.687  22.645 -18.595  1.00 24.33      A    O
ATOM    858  N   GLU   567      -7.990  24.318 -19.934  1.00 24.46      A    N
ATOM    859  CA  GLU   567      -8.361  23.645 -21.170  1.00 25.18      A    C
ATOM    860  CB  GLU   567      -8.547  24.685 -22.274  1.00 24.46      A    C
ATOM    861  CG  GLU   567      -8.779  24.101 -23.646  1.00 24.68      A    C
ATOM    862  CD  GLU   567      -9.514  25.058 -24.557  1.00 25.49      A    C
ATOM    863  OE1 GLU   567     -10.669  25.420 -24.233  1.00 26.55      A    O
ATOM    864  OE2 GLU   567      -8.939  25.449 -25.596  1.00 28.35      A    O
ATOM    865  C   GLU   567      -7.333  22.608 -21.604  1.00 26.33      A    C
ATOM    866  O   GLU   567      -7.683  21.517 -22.072  1.00 25.57      A    O
ATOM    867  N   VAL   568      -6.063  22.953 -21.453  1.00 26.79      A    N
ATOM    868  CA  VAL   568      -4.991  22.112 -21.955  1.00 29.50      A    C
ATOM    869  CB  VAL   568      -3.874  22.974 -22.571  1.00 28.46      A    C
ATOM    870  CG1 VAL   568      -2.660  22.109 -22.901  1.00 28.66      A    C
ATOM    871  CG2 VAL   568      -4.402  23.646 -23.842  1.00 24.39      A    C
ATOM    872  C   VAL   568      -4.428  21.223 -20.853  1.00 32.48      A    C
ATOM    873  O   VAL   568      -3.985  21.710 -19.818  1.00 31.74      A    O
ATOM    874  N   GLU   569      -4.465  19.914 -21.080  1.00 36.29      A    N
ATOM    875  CA  GLU   569      -4.108  18.953 -20.047  1.00 41.85      A    C
ATOM    876  CB  GLU   569      -4.360  17.520 -20.538  1.00 36.99      A    C
ATOM    877  CG  GLU   569      -5.837  17.124 -20.604  1.00 31.58      A    C
ATOM    878  CD  GLU   569      -6.534  17.605 -21.868  1.00 30.99      A    C
ATOM    879  OE1 GLU   569      -7.728  17.286 -22.050  1.00 31.44      A    O
ATOM    880  OE2 GLU   569      -5.893  18.299 -22.687  1.00 28.21      A    O
ATOM    881  C   GLU   569      -2.653  19.114 -19.603  1.00 48.32      A    C
ATOM    882  O   GLU   569      -1.767  19.363 -20.424  1.00 47.22      A    O
ATOM    883  N   ASP   570      -2.439  18.957 -18.295  1.00 55.96      A    N
ATOM    884  CA  ASP   570      -1.185  19.278 -17.608  1.00 63.65      A    C
ATOM    885  CB  ASP   570       0.027  18.894 -18.464  1.00 66.25      A    C
ATOM    886  CG  ASP   570       0.493  17.475 -18.207  1.00 69.76      A    C
ATOM    887  OD1 ASP   570       0.436  17.039 -17.035  1.00 72.02      A    O
ATOM    888  OD2 ASP   570       0.915  16.798 -19.172  1.00 69.99      A    O
ATOM    889  C   ASP   570      -1.107  20.757 -17.236  1.00 67.13      A    C
ATOM    890  O   ASP   570      -0.426  21.538 -17.903  1.00 68.92      A    O
ATOM    891  N   LEU   571      -1.802  21.130 -16.161  1.00 69.67      A    N
ATOM    892  CA  LEU   571      -1.922  22.532 -15.760  1.00 72.16      A    C
ATOM    893  CB  LEU   571      -2.990  22.691 -14.664  1.00 71.90      A    C
ATOM    894  CG  LEU   571      -2.707  22.122 -13.265  1.00 71.59      A    C
ATOM    895  CD1 LEU   571      -3.756  22.633 -12.289  1.00 70.61      A    C
ATOM    896  CD2 LEU   571      -2.709  20.598 -13.304  1.00 72.02      A    C
ATOM    897  C   LEU   571      -0.591  23.094 -15.259  1.00 73.82      A    C
ATOM    898  O   LEU   571      -0.554  24.116 -14.566  1.00 75.52      A    O
ATOM    899  N   PRO   577       4.838  27.651 -10.922  1.00 57.36      A    N
ATOM    900  CD  PRO   577       6.223  27.162 -11.012  1.00 59.08      A    C
ATOM    901  CA  PRO   577       4.535  28.186  -9.587  1.00 56.03      A    C
ATOM    902  CB  PRO   577       5.864  28.077  -8.836  1.00 56.74      A    C
ATOM    903  CG  PRO   577       6.621  27.019  -9.563  1.00 58.87      A    C
ATOM    904  C   PRO   577       4.057  29.627  -9.671  1.00 53.74      A    C
ATOM    905  O   PRO   577       4.654  30.445 -10.365  1.00 55.21      A    O
ATOM    906  N   VAL   578       2.983  29.931  -8.956  1.00 49.44      A    N
ATOM    907  CA  VAL   578       2.397  31.260  -9.002  1.00 46.13      A    C
ATOM    908  CB  VAL   578       0.859  31.179  -8.897  1.00 45.53      A    C
ATOM    909  CG1 VAL   578       0.260  32.570  -8.892  1.00 45.46      A    C
ATOM    910  CG2 VAL   578       0.308  30.370 -10.057  1.00 47.41      A    C
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ATOM    911  C   VAL   578       2.933  32.114  -7.859  1.00 43.82      A    C
ATOM    912  O   VAL   578       2.958  31.671  -6.707  1.00 43.37      A    O
ATOM    913  N   LEU   579       3.365  33.331  -8.180  1.00 38.55      A    N
ATOM    914  CA  LEU   579       3.764  34.284  -7.150  1.00 36.58      A    C
ATOM    915  CB  LEU   579       4.586  35.429  -7.753  1.00 35.06      A    C
ATOM    916  CG  LEU   579       5.926  35.086  -8.408  1.00 35.00      A    C
ATOM    917  CD1 LEU   579       6.668  36.379  -8.730  1.00 34.09      A    C
ATOM    918  CD2 LEU   579       6.758  34.216  -7.480  1.00 32.12      A    C
ATOM    919  C   LEU   579       2.524  34.856  -6.475  1.00 35.58      A    C
ATOM    920  O   LEU   579       1.469  34.997  -7.101  1.00 35.13      A    O
ATOM    921  N   ARG   580       2.658  35.196  -5.198  1.00 35.00      A    N
ATOM    922  CA  ARG   580       1.539  35.720  -4.426  1.00 36.48      A    C
ATOM    923  CB  ARG   580       1.224  37.154  -4.863  1.00 36.24      A    C
ATOM    924  CG  ARG   580       2.223  38.184  -4.355  1.00 38.98      A    C
ATOM    925  CD  ARG   580       2.105  39.507  -5.099  1.00 38.47      A    C
ATOM    926  NE  ARG   580       2.801  40.584  -4.399  1.00 38.42      A    N
ATOM    927  CZ  ARG   580       3.303  41.662  -4.993  1.00 38.63      A    C
ATOM    928  NH1 ARG   580       3.917  42.593  -4.272  1.00 35.39      A    N
ATOM    929  NH2 ARG   580       3.196  41.807  -6.311  1.00 35.21      A    N
ATOM    930  C   ARG   580       0.299  34.839  -4.585  1.00 36.61      A    C
ATOM    931  O   ARG   580      -0.789  35.326  -4.901  1.00 36.06      A    O
ATOM    932  N   PRO   581       0.453  33.528  -4.351  1.00 37.30      A    N
ATOM    933  CD  PRO   581       1.638  32.925  -3.717  1.00 36.85      A    C
ATOM    934  CA  PRO   581      -0.611  32.544  -4.578  1.00 39.33      A    C
ATOM    935  CB  PRO   581       0.051  31.211  -4.242  1.00 40.31      A    C
ATOM    936  CG  PRO   581       1.147  31.569  -3.284  1.00 39.56      A    C
ATOM    937  C   PRO   581      -1.849  32.795  -3.724  1.00 40.74      A    C
ATOM    938  O   PRO   581      -2.935  32.322  -4.048  1.00 41.03      A    O
ATOM    939  N   ARG   582      -1.684  33.538  -2.633  1.00 41.34      A    N
ATOM    940  CA  ARG   582      -2.821  33.930  -1.809  1.00 43.35      A    C
ATOM    941  CB  ARG   582      -2.391  34.085  -0.346  1.00 44.09      A    C
ATOM    942  CG  ARG   582      -1.819  32.811   0.257  1.00 48.45      A    C
ATOM    943  CD  ARG   582      -0.916  33.106   1.448  1.00 52.04      A    C
ATOM    944  NE  ARG   582      -0.250  31.901   1.942  1.00 55.65      A    N
ATOM    945  CZ  ARG   582       0.862  31.392   1.419  1.00 58.45      A    C
ATOM    946  NH1 ARG   582       1.396  30.291   1.935  1.00 59.76      A    N
ATOM    947  NH2 ARG   582       1.442  31.979   0.378  1.00 59.55      A    N
ATOM    948  C   ARG   582      -3.411  35.243  -2.315  1.00 44.15      A    C
ATOM    949  O   ARG   582      -2.684  36.190  -2.612  1.00 45.85      A    O
ATOM    950  N   GLY   583      -4.731  35.301  -2.412  1.00 43.03      A    N
ATOM    951  CA  GLY   583      -5.352  36.495  -2.937  1.00 44.47      A    C
ATOM    952  C   GLY   583      -5.441  37.589  -1.896  1.00 47.04      A    C
ATOM    953  O   GLY   583      -5.458  37.320  -0.696  1.00 47.38      A    O
ATOM    954  N   GLN   584      -5.491  38.833  -2.355  1.00 47.91      A    N
ATOM    955  CA  GLN   584      -5.956  39.915  -1.513  1.00 50.00      A    C
ATOM    956  CB  GLN   584      -5.981  41.225  -2.302  1.00 54.25      A    C
ATOM    957  CG  GLN   584      -4.604  41.807  -2.565  1.00 60.44      A    C
ATOM    958  CD  GLN   584      -3.902  42.226  -1.286  1.00 65.17      A    C
ATOM    959  OE1 GLN   584      -4.440  43.010  -0.499  1.00 68.24      A    O
ATOM    960  NE2 GLN   584      -2.697  41.703  -1.068  1.00 66.44      A    N
ATOM    961  C   GLN   584      -7.361  39.548  -1.057  1.00 49.41      A    C
ATOM    962  O   GLN   584      -8.005  38.675  -1.640  1.00 48.96      A    O
ATOM    963  N   PRO   585      -7.858  40.204  -0.002  1.00 49.04      A    N
ATOM    964  CD  PRO   585      -7.320  41.365   0.727  1.00 48.81      A    C
ATOM    965  CA  PRO   585      -9.199  39.834   0.453  1.00 47.47      A    C
ATOM    966  CB  PRO   585      -9.475  40.806   1.602  1.00 48.68      A    C
ATOM    967  CG  PRO   585      -8.538  41.942   1.384  1.00 49.88      A    C
ATOM    968  C   PRO   585     -10.210  39.955  -0.677  1.00 45.46      A    C
ATOM    969  O   PRO   585     -10.194  40.922  -1.441  1.00 45.47      A    O
ATOM    970  N   ASN   586     -11.073  38.953  -0.784  1.00 42.42      A    N
ATOM    971  CA  ASN   586     -12.076  38.905  -1.836  1.00 39.41      A    C
ATOM    972  CB  ASN   586     -12.928  40.174  -1.818  1.00 39.50      A    C
ATOM    973  CG  ASN   586     -13.822  40.255  -0.595  1.00 43.25      A    C
ATOM    974  OD1 ASN   586     -14.272  39.236  -0.072  1.00 39.56      A    O
ATOM    975  ND2 ASN   586     -14.080  41.473  -0.128  1.00 44.78      A    N
ATOM    976  C   ASN   586     -11.481  38.706  -3.226  1.00 36.56      A    C
ATOM    977  O   ASN   586     -12.121  39.032  -4.222  1.00 37.07      A    O
ATOM    978  N   GLN   587     -10.266  38.163  -3.287  1.00 34.14      A    N
ATOM    979  CA  GLN   587      -9.629  37.824  -4.563  1.00 33.02      A    C
ATOM    980  CB  GLN   587      -8.337  38.631  -4.731  1.00 34.05      A    C
ATOM    981  CG  GLN   587      -7.551  38.349  -6.005  1.00 34.28      A    C
ATOM    982  CD  GLN   587      -6.272  39.189  -6.099  1.00 37.58      A    C
ATOM    983  OE1 GLN   587      -6.142  40.061  -6.966  1.00 36.43      A    O
ATOM    984  NE2 GLN   587      -5.328  38.927  -5.204  1.00 34.03      A    N
ATOM    985  C   GLN   587      -9.316  36.325  -4.660  1.00 32.64      A    C
ATOM    986  O   GLN   587      -8.899  35.712  -3.679  1.00 31.40      A    O
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ATOM    987  N   CYS   588      -9.523  35.750  -5.847  1.00 29.94      A    N
ATOM    988  CA  CYS   588      -9.140  34.368  -6.138  1.00 29.32      A    C
ATOM    989  C   CYS   588      -7.901  34.316  -7.018  1.00 28.74      A    C
ATOM    990  O   CYS   588      -7.692  35.196  -7.850  1.00 30.51      A    O
ATOM    991  CB  CYS   588     -10.256  33.644  -6.880  1.00 28.96      A    C
ATOM    992  SG  CYS   588     -11.771  33.388  -5.926  1.00 34.01      A    S
ATOM    993  N   VAL   589      -7.106  33.263  -6.866  1.00 27.74      A    N
ATOM    994  CA  VAL   589      -5.879  33.123  -7.644  1.00 28.03      A    C
ATOM    995  CB  VAL   589      -4.644  33.387  -6.752  1.00 28.90      A    C
ATOM    996  CG1 VAL   589      -3.364  33.266  -7.568  1.00 28.12      A    C
ATOM    997  CG2 VAL   589      -4.750  34.780  -6.123  1.00 29.60      A    C
ATOM    998  C   VAL   589      -5.761  31.728  -8.273  1.00 29.72      A    C
ATOM    999  O   VAL   589      -5.867  30.718  -7.580  1.00 29.20      A    O
ATOM   1000  N   GLY   590      -5.540  31.679  -9.585  1.00 29.03      A    N
ATOM   1001  CA  GLY   590      -5.365  30.401 -10.255  1.00 29.41      A    C
ATOM   1002  C   GLY   590      -4.067  30.331 -11.037  1.00 30.32      A    C
ATOM   1003  O   GLY   590      -3.375  31.335 -11.179  1.00 31.55      A    O
ATOM   1004  N   HIS   591      -3.732  29.151 -11.549  1.00 31.69      A    N
ATOM   1005  CA  HIS   591      -2.535  28.989 -12.367  1.00 34.04      A    C
ATOM   1006  CB  HIS   591      -2.343  27.516 -12.727  1.00 36.27      A    C
ATOM   1007  CG  HIS   591      -2.045  26.649 -11.546  1.00 44.11      A    C
ATOM   1008  CD2 HIS   591      -2.848  25.856 -10.796  1.00 46.70      A    C
ATOM   1009  ND1 HIS   591      -0.788  26.561 -10.986  1.00 46.49      A    N
ATOM   1010  CE1 HIS   591      -0.830  25.754  -9.940  1.00 46.26      A    C
ATOM   1011  NE2 HIS   591      -2.069  25.313  -9.803  1.00 49.17      A    N
ATOM   1012  C   HIS   591      -2.614  29.830 -13.640  1.00 34.21      A    C
ATOM   1013  O   HIS   591      -3.699  30.211 -14.077  1.00 32.59      A    O
ATOM   1014  N   ARG   592      -1.464  30.125 -14.234  1.00 33.67      A    N
ATOM   1015  CA  ARG   592      -1.443  31.006 -15.393  1.00 36.88      A    C
ATOM   1016  CB  ARG   592      -0.004  31.430 -15.716  1.00 39.26      A    C
ATOM   1017  CG  ARG   592       0.995  30.303 -15.710  1.00 45.79      A    C
ATOM   1018  CD  ARG   592       2.258  30.690 -16.456  1.00 50.53      A    C
ATOM   1019  NE  ARG   592       3.009  31.749 -15.787  1.00 53.30      A    N
ATOM   1020  CZ  ARG   592       3.575  32.773 -16.420  1.00 55.13      A    C
ATOM   1021  NH1 ARG   592       4.247  33.693 -15.740  1.00 55.24      A    N
ATOM   1022  NH2 ARG   592       3.465  32.879 -17.738  1.00 57.78      A    N
ATOM   1023  C   ARG   592      -2.112  30.410 -16.634  1.00 35.10      A    C
ATOM   1024  O   ARG   592      -2.566  31.149 -17.506  1.00 35.39      A    O
ATOM   1025  N   GLU   593      -2.192  29.084 -16.709  1.00 34.62      A    N
ATOM   1026  CA  GLU   593      -2.877  28.428 -17.823  1.00 33.78      A    C
ATOM   1027  CB  GLU   593      -2.181  27.120 -18.189  1.00 36.33      A    C
ATOM   1028  CG  GLU   593      -0.983  27.299 -19.098  1.00 46.12      A    C
ATOM   1029  CD  GLU   593       0.219  27.845 -18.362  1.00 52.97      A    C
ATOM   1030  OE1 GLU   593       0.553  27.303 -17.284  1.00 55.60      A    O
ATOM   1031  OE2 GLU   593       0.828  28.818 -18.861  1.00 57.96      A    O
ATOM   1032  C   GLU   593      -4.350  28.135 -17.558  1.00 32.11      A    C
ATOM   1033  O   GLU   593      -5.019  27.525 -18.388  1.00 29.63      A    O
ATOM   1034  N   ALA   594      -4.855  28.559 -16.406  1.00 28.88      A    N
ATOM   1035  CA  ALA   594      -6.236  28.267 -16.046  1.00 28.39      A    C
ATOM   1036  CB  ALA   594      -6.283  27.571 -14.687  1.00 26.56      A    C
ATOM   1037  C   ALA   594      -7.092  29.528 -16.018  1.00 28.13      A    C
ATOM   1038  O   ALA   594      -6.584  30.637 -15.843  1.00 28.06      A    O
ATOM   1039  N   SER   595      -8.396  29.358 -16.197  1.00 25.46      A    N
ATOM   1040  CA  SER   595      -9.335  30.416 -15.844  1.00 25.16      A    C
ATOM   1041  CB  SER   595     -10.656  30.226 -16.588  1.00 24.79      A    C
ATOM   1042  OG  SER   595     -10.490  30.436 -17.976  1.00 27.76      A    O
ATOM   1043  C   SER   595      -9.580  30.372 -14.338  1.00 24.98      A    C
ATOM   1044  O   SER   595      -9.479  29.312 -13.720  1.00 24.48      A    O
ATOM   1045  N   ILE   596      -9.891  31.524 -13.752  1.00 25.25      A    N
ATOM   1046  CA  ILE   596     -10.212  31.601 -12.333  1.00 25.69      A    C
ATOM   1047  CB  ILE   596      -9.165  32.467 -11.577  1.00 27.15      A    C
ATOM   1048  CG2 ILE   596      -9.259  33.923 -12.023  1.00 29.13      A    C
ATOM   1049  CG1 ILE   596      -9.375  32.349 -10.067  1.00 26.07      A    C
ATOM   1050  CD1 ILE   596      -8.902  31.029  -9.490  1.00 24.57      A    C
ATOM   1051  C   ILE   596     -11.619  32.192 -12.154  1.00 24.88      A    C
ATOM   1052  O   ILE   596     -12.005  33.135 -12.849  1.00 24.39      A    O
ATOM   1053  N   HIS   597     -12.385  31.613 -11.235  1.00 23.51      A    N
ATOM   1054  CA  HIS   597     -13.795  31.956 -11.062  1.00 22.95      A    C
ATOM   1055  CB  HIS   597     -14.689  30.798 -11.522  1.00 23.62      A    C
ATOM   1056  CG  HIS   597     -14.325  30.238 -12.863  1.00 22.44      A    C
ATOM   1057  CD2 HIS   597     -13.774  29.053 -13.213  1.00 25.26      A    C
ATOM   1058  ND1 HIS   597     -14.579  30.904 -14.042  1.00 23.06      A    N
ATOM   1059  CE1 HIS   597     -14.206  30.152 -15.063  1.00 23.37      A    C
ATOM   1060  NE2 HIS   597     -13.715  29.022 -14.588  1.00 24.84      A    N
ATOM   1061  C   HIS   597     -14.076  32.224  -9.586  1.00 25.18      A    C
ATOM   1062  O   HIS   597     -13.767  31.394  -8.735  1.00 25.64      A    O
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ATOM   1063  N   ALA   598     -14.672  33.373  -9.289  1.00 25.15      A    N
ATOM   1064  CA  ALA   598     -14.969  33.749  -7.909  1.00 26.23      A    C
ATOM   1065  CB  ALA   598     -14.384  35.114  -7.606  1.00 23.97      A    C
ATOM   1066  C   ALA   598     -16.472  33.778  -7.680  1.00 27.18      A    C
ATOM   1067  O   ALA   598     -17.224  34.295  -8.508  1.00 27.20      A    O
ATOM   1068  N   SER   599     -16.907  33.223  -6.556  1.00 26.97      A    N
ATOM   1069  CA  SER   599     -18.286  33.395  -6.133  1.00 29.40      A    C
ATOM   1070  CB  SER   599     -18.775  32.168  -5.376  1.00 30.19      A    C
ATOM   1071  OG  SER   599     -20.054  32.417  -4.826  1.00 33.89      A    O
ATOM   1072  C   SER   599     -18.387  34.618  -5.232  1.00 30.33      A    C
ATOM   1073  O   SER   599     -17.861  34.629  -4.120  1.00 31.52      A    O
ATOM   1074  N   CYS   600     -19.064  35.646  -5.728  1.00 32.35      A    N
ATOM   1075  CA  CYS   600     -19.170  36.923  -5.036  1.00 35.21      A    C
ATOM   1076  C   CYS   600     -20.606  37.142  -4.591  1.00 36.07      A    C
ATOM   1077  O   CYS   600     -21.520  37.174  -5.413  1.00 35.83      A    O
ATOM   1078  CB  CYS   600     -18.744  38.055  -5.971  1.00 35.88      A    C
ATOM   1079  SG  CYS   600     -17.010  37.951  -6.513  1.00 39.28      A    S
ATOM   1080  N   CYS   601     -20.816  37.282  -3.289  1.00 38.47      A    N
ATOM   1081  CA  CYS   601     -22.175  37.408  -2.790  1.00 40.53      A    C
ATOM   1082  C   CYS   601     -22.415  38.723  -2.079  1.00 42.20      A    C
ATOM   1083  O   CYS   601     -21.636  39.141  -1.218  1.00 40.46      A    O
ATOM   1084  CB  CYS   601     -22.511  36.277  -1.832  1.00 40.11      A    C
ATOM   1085  SG  CYS   601     -22.373  34.577  -2.469  1.00 41.58      A    S
ATOM   1086  N   HIS   602     -23.510  39.369  -2.453  1.00 44.38      A    N
ATOM   1087  CA  HIS   602     -24.081  40.418  -1.637  1.00 47.94      A    C
ATOM   1088  CB  HIS   602     -24.858  41.399  -2.518  1.00 51.93      A    C
ATOM   1089  CG  HIS   602     -25.222  42.674  -1.826  1.00 58.56      A    C
ATOM   1090  CD2 HIS   602     -24.451  43.620  -1.237  1.00 60.81      A    C
ATOM   1091  ND1 HIS   602     -26.526  43.095  -1.678  1.00 60.77      A    N
ATOM   1092  CE1 HIS   602     -26.543  44.246  -1.028  1.00 62.59      A    C
ATOM   1093  NE2 HIS   602     -25.297  44.587  -0.749  1.00 62.85      A    N
ATOM   1094  C   HIS   602     -25.017  39.713  -0.661  1.00 48.23      A    C
ATOM   1095  O   HIS   602     -26.025  39.129  -1.063  1.00 45.88      A    O
ATOM   1096  N   ALA   603     -24.661  39.746   0.619  1.00 49.87      A    N
ATOM   1097  CA  ALA   603     -25.450  39.089   1.653  1.00 52.49      A    C
ATOM   1098  CB  ALA   603     -25.006  37.647   1.804  1.00 50.93      A    C
ATOM   1099  C   ALA   603     -25.287  39.829   2.975  1.00 53.94      A    C
ATOM   1100  O   ALA   603     -24.183  39.934   3.507  1.00 55.03      A    O
ATOM   1101  N   PRO   604     -26.394  40.340   3.530  1.00 55.31      A    N
ATOM   1102  CD  PRO   604     -27.775  40.052   3.105  1.00 56.68      A    C
ATOM   1103  CA  PRO   604     -26.349  41.196   4.721  1.00 55.19      A    C
ATOM   1104  CB  PRO   604     -27.808  41.600   4.931  1.00 56.90      A    C
ATOM   1105  CG  PRO   604     -28.600  40.510   4.278  1.00 57.49      A    C
ATOM   1106  C   PRO   604     -25.762  40.507   5.951  1.00 53.84      A    C
ATOM   1107  O   PRO   604     -26.291  39.504   6.429  1.00 53.50      A    O
ATOM   1108  N   GLY   605     -24.664  41.058   6.459  1.00 51.66      A    N
ATOM   1109  CA  GLY   605     -24.084  40.547   7.683  1.00 49.75      A    C
ATOM   1110  C   GLY   605     -23.181  39.350   7.466  1.00 49.32      A    C
ATOM   1111  O   GLY   605     -22.695  38.750   8.426  1.00 49.78      A    O
ATOM   1112  N   LEU   606     -22.951  38.991   6.209  1.00 47.32      A    N
ATOM   1113  CA  LEU   606     -22.048  37.888   5.914  1.00 45.14      A    C
ATOM   1114  CB  LEU   606     -22.319  37.334   4.516  1.00 46.10      A    C
ATOM   1115  CG  LEU   606     -21.432  36.150   4.128  1.00 46.60      A    C
ATOM   1116  CD1 LEU   606     -21.603  35.038   5.146  1.00 45.47      A    C
ATOM   1117  CD2 LEU   606     -21.794  35.665   2.731  1.00 47.85      A    C
ATOM   1118  C   LEU   606     -20.599  38.351   6.015  1.00 43.35      A    C
ATOM   1119  O   LEU   606     -20.226  39.381   5.460  1.00 42.73      A    O
ATOM   1120  N   GLU   607     -19.792  37.584   6.737  1.00 41.82      A    N
ATOM   1121  CA  GLU   607     -18.388  37.913   6.949  1.00 41.58      A    C
ATOM   1122  CB  GLU   607     -18.194  38.408   8.390  1.00 43.33      A    C
ATOM   1123  CG  GLU   607     -16.751  38.685   8.788  1.00 48.75      A    C
ATOM   1124  CD  GLU   607     -16.585  38.939  10.289  1.00 52.26      A    C
ATOM   1125  OE1 GLU   607     -17.466  38.528  11.082  1.00 53.24      A    O
ATOM   1126  OE2 GLU   607     -15.564  39.548  10.675  1.00 52.44      A    O
ATOM   1127  C   GLU   607     -17.541  36.659   6.699  1.00 40.02      A    C
ATOM   1128  O   GLU   607     -17.845  35.587   7.217  1.00 39.94      A    O
ATOM   1129  N   CYS   608     -16.483  36.786   5.905  1.00 38.50      A    N
ATOM   1130  CA  CYS   608     -15.634  35.635   5.616  1.00 38.05      A    C
ATOM   1131  C   CYS   608     -14.154  35.926   5.793  1.00 38.09      A    C
ATOM   1132  O   CYS   608     -13.724  37.076   5.752  1.00 38.32      A    O
ATOM   1133  CB  CYS   608     -15.861  35.139   4.192  1.00 36.34      A    C
ATOM   1134  SG  CYS   608     -17.584  34.811   3.711  1.00 38.54      A    S
ATOM   1135  N   LYS   609     -13.381  34.864   5.981  1.00 37.60      A    N
ATOM   1136  CA  LYS   609     -11.938  34.967   6.132  1.00 37.54      A    C
ATOM   1137  CB  LYS   609     -11.566  35.070   7.611  1.00 36.16      A    C
ATOM   1138  CG  LYS   609     -11.789  33.783   8.375  1.00 39.02      A    C
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ATOM   1139  CD  LYS   609     -11.435  33.924   9.849  1.00 42.30      A    C
ATOM   1140  CE  LYS   609     -11.847  32.676  10.614  1.00 42.81      A    C
ATOM   1141  NZ  LYS   609     -11.420  32.722  12.039  1.00 44.87      A    N
ATOM   1142  C   LYS   609     -11.309  33.710   5.538  1.00 37.29      A    C
ATOM   1143  O   LYS   609     -12.004  32.728   5.264  1.00 37.32      A    O
ATOM   1144  N   VAL   610      -9.995  33.742   5.351  1.00 36.83      A    N
ATOM   1145  CA  VAL   610      -9.284  32.629   4.743  1.00 36.94      A    C
ATOM   1146  CB  VAL   610      -8.484  33.091   3.511  1.00 37.85      A    C
ATOM   1147  CG1 VAL   610      -7.745  31.913   2.902  1.00 38.22      A    C
ATOM   1148  CG2 VAL   610      -9.423  33.721   2.488  1.00 37.85      A    C
ATOM   1149  C   VAL   610      -8.323  31.984   5.729  1.00 37.80      A    C
ATOM   1150  O   VAL   610      -7.599  32.675   6.446  1.00 38.87      A    O
ATOM   1151  N   LYS   611      -8.330  30.655   5.761  1.00 37.56      A    N
ATOM   1152  CA  LYS   611      -7.388  29.883   6.568  1.00 38.62      A    C
ATOM   1153  CB  LYS   611      -8.116  29.133   7.684  1.00 38.63      A    C
ATOM   1154  CG  LYS   611      -8.917  30.008   8.625  1.00 42.75      A    C
ATOM   1155  CD  LYS   611      -9.432  29.193   9.793  1.00 42.52      A    C
ATOM   1156  CE  LYS   611      -8.336  28.291  10.342  1.00 44.58      A    C
ATOM   1157  NZ  LYS   611      -8.782  27.548  11.559  1.00 48.18      A    N
ATOM   1158  C   LYS   611      -6.718  28.865   5.664  1.00 39.23      A    C
ATOM   1159  O   LYS   611      -7.365  28.288   4.791  1.00 39.27      A    O
ATOM   1160  N   GLU   612      -5.429  28.632   5.874  1.00 39.16      A    N
ATOM   1161  CA  GLU   612      -4.726  27.624   5.094  1.00 42.41      A    C
ATOM   1162  CB  GLU   612      -3.867  28.295   4.025  1.00 44.71      A    C
ATOM   1163  CG  GLU   612      -2.809  29.235   4.571  1.00 49.08      A    C
ATOM   1164  CD  GLU   612      -2.008  29.896   3.465  1.00 53.20      A    C
ATOM   1165  OE1 GLU   612      -2.592  30.697   2.699  1.00 54.07      A    O
ATOM   1166  OE2 GLU   612      -0.796  29.609   3.360  1.00 53.71      A    O
ATOM   1167  C   GLU   612      -3.853  26.736   5.970  1.00 42.48      A    C
ATOM   1168  O   GLU   612      -3.592  27.058   7.127  1.00 43.10      A    O
ATOM   1169  N   HIS   613      -3.414  25.613   5.415  1.00 41.33      A    N
ATOM   1170  CA  HIS   613      -2.438  24.758   6.074  1.00 42.62      A    C
ATOM   1171  CB  HIS   613      -3.140  23.783   7.025  1.00 44.30      A    C
ATOM   1172  CG  HIS   613      -2.222  22.782   7.658  1.00 44.52      A    C
ATOM   1173  CD2 HIS   613      -1.137  22.941   8.453  1.00 44.27      A    C
ATOM   1174  ND1 HIS   613      -2.381  21.421   7.498  1.00 45.05      A    N
ATOM   1175  CE1 HIS   613      -1.435  20.786   8.167  1.00 43.50      A    C
ATOM   1176  NE2 HIS   613      -0.667  21.685   8.755  1.00 44.92      A    N
ATOM   1177  C   HIS   613      -1.677  23.994   5.003  1.00 44.32      A    C
ATOM   1178  O   HIS   613      -2.277  23.299   4.183  1.00 44.33      A    O
ATOM   1179  N   GLY   614      -0.356  24.142   5.000  1.00 45.57      A    N
ATOM   1180  CA  GLY   614       0.460  23.465   4.010  1.00 46.92      A    C
ATOM   1181  C   GLY   614       1.295  22.352   4.609  1.00 48.04      A    C
ATOM   1182  O   GLY   614       1.660  22.402   5.779  1.00 48.09      A    O
ATOM   1183  N   ILE   615       1.594  21.342   3.801  1.00 50.58      A    N
ATOM   1184  CA  ILE   615       2.451  20.237   4.214  1.00 53.77      A    C
ATOM   1185  CB  ILE   615       1.643  18.935   4.407  1.00 55.20      A    C
ATOM   1186  CG2 ILE   615       2.575  17.774   4.701  1.00 54.79      A    C
ATOM   1187  CG1 ILE   615       0.648  19.109   5.551  1.00 55.97      A    C
ATOM   1188  CD1 ILE   615       1.290  19.599   6.820  1.00 58.58      A    C
ATOM   1189  C   ILE   615       3.505  19.996   3.143  1.00 55.43      A    C
ATOM   1190  O   ILE   615       3.203  20.011   1.950  1.00 55.42      A    O
ATOM   1191  N   PRO   616       4.762  19.778   3.559  1.00 57.06      A    N
ATOM   1192  CD  PRO   616       5.226  19.885   4.952  1.00 57.57      A    C
ATOM   1193  CA  PRO   616       5.878  19.575   2.627  1.00 58.08      A    C
ATOM   1194  CB  PRO   616       7.100  19.486   3.541  1.00 58.83      A    C
ATOM   1195  CG  PRO   616       6.684  20.196   4.792  1.00 58.90      A    C
ATOM   1196  C   PRO   616       5.717  18.322   1.768  1.00 58.68      A    C
ATOM   1197  O   PRO   616       5.755  18.392   0.540  1.00 59.30      A    O
ATOM   1198  N   ALA   617       5.539  17.177   2.420  1.00 58.67      A    N
ATOM   1199  CA  ALA   617       5.396  15.915   1.704  1.00 60.47      A    C
ATOM   1200  CB  ALA   617       6.581  15.005   2.006  1.00 60.68      A    C
ATOM   1201  C   ALA   617       4.097  15.227   2.095  1.00 60.64      A    C
ATOM   1202  O   ALA   617       4.096  14.273   2.876  1.00 60.93      A    O
ATOM   1203  N   PRO   618       2.971  15.696   1.541  1.00 60.54      A    N
ATOM   1204  CD  PRO   618       2.883  16.645   0.417  1.00 60.69      A    C
ATOM   1205  CA  PRO   618       1.660  15.169   1.929  1.00 60.60      A    C
ATOM   1206  CB  PRO   618       0.679  15.977   1.079  1.00 60.68      A    C
ATOM   1207  CG  PRO   618       1.485  16.442  -0.093  1.00 61.12      A    C
ATOM   1208  C   PRO   618       1.557  13.669   1.673  1.00 60.54      A    C
ATOM   1209  O   PRO   618       1.962  13.178   0.621  1.00 60.46      A    O
ATOM   1210  N   GLN   619       1.017  12.947   2.647  1.00 61.08      A    N
ATOM   1211  CA  GLN   619       0.972  11.493   2.585  1.00 62.08      A    C
ATOM   1212  CB  GLN   619       1.260  10.902   3.963  1.00 64.75      A    C
ATOM   1213  CG  GLN   619       2.736  10.820   4.294  1.00 69.13      A    C
ATOM   1214  CD  GLN   619       3.405   9.620   3.650  1.00 72.41      A    C
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ATOM	1215	OE1	GLN	619	4.597	9.381	3.844	1.00	75.41	A	O
ATOM	1216	NE2	GLN	619	2.636	8.855	2.879	1.00	73.28	A	N
ATOM	1217	C	GLN	619	-0.366	10.974	2.082	1.00	60.67	A	C
ATOM	1218	O	GLN	619	-0.690	9.795	2.248	1.00	61.39	A	O
ATOM	1219	N	GLY	620	-1.140	11.858	1.463	1.00	58.38	A	N
ATOM	1220	CA	GLY	620	-2.412	11.446	0.902	1.00	55.08	A	C
ATOM	1221	C	GLY	620	-3.476	12.526	0.959	1.00	52.97	A	C
ATOM	1222	O	GLY	620	-4.332	12.608	0.076	1.00	52.81	A	O
ATOM	1223	N	GLN	621	-3.433	13.353	1.998	1.00	49.05	A	N
ATOM	1224	CA	GLN	621	-4.334	14.486	2.084	1.00	46.66	A	C
ATOM	1225	CB	GLN	621	-5.715	14.040	2.571	1.00	48.24	A	C
ATOM	1226	CG	GLN	621	-5.783	13.670	4.038	1.00	50.90	A	C
ATOM	1227	CD	GLN	621	-7.187	13.283	4.471	1.00	52.62	A	C
ATOM	1228	OE1	GLN	621	-8.035	12.943	3.645	1.00	53.23	A	O
ATOM	1229	NE2	GLN	621	-7.440	13.338	5.774	1.00	53.97	A	N
ATOM	1230	C	GLN	621	-3.793	15.570	2.998	1.00	44.42	A	C
ATOM	1231	O	GLN	621	-2.991	15.310	3.894	1.00	43.84	A	O
ATOM	1232	N	VAL	622	-4.230	16.795	2.742	1.00	41.31	A	N
ATOM	1233	CA	VAL	622	-3.895	17.932	3.576	1.00	38.86	A	C
ATOM	1234	CB	VAL	622	-3.022	18.943	2.814	1.00	37.61	A	C
ATOM	1235	CG1	VAL	622	-2.539	20.029	3.759	1.00	39.32	A	C
ATOM	1236	CG2	VAL	622	-1.858	18.234	2.162	1.00	38.06	A	C
ATOM	1237	C	VAL	622	-5.216	18.597	3.935	1.00	38.57	A	C
ATOM	1238	O	VAL	622	-6.068	18.804	3.068	1.00	38.51	A	O
ATOM	1239	N	THR	623	-5.392	18.926	5.207	1.00	35.77	A	N
ATOM	1240	CA	THR	623	-6.656	19.479	5.664	1.00	33.79	A	C
ATOM	1241	CB	THR	623	-7.387	18.504	6.604	1.00	34.25	A	C
ATOM	1242	OG1	THR	623	-6.629	18.345	7.810	1.00	33.79	A	O
ATOM	1243	CG2	THR	623	-7.559	17.148	5.932	1.00	33.56	A	C
ATOM	1244	C	THR	623	-6.457	20.786	6.407	1.00	33.76	A	C
ATOM	1245	O	THR	623	-5.388	21.040	6.968	1.00	33.37	A	O
ATOM	1246	N	VAL	624	-7.495	21.615	6.401	1.00	32.04	A	N
ATOM	1247	CA	VAL	624	-7.583	22.747	7.310	1.00	31.45	A	C
ATOM	1248	CB	VAL	624	-6.990	24.032	6.674	1.00	32.64	A	C
ATOM	1249	CG1	VAL	624	-7.790	24.431	5.446	1.00	31.89	A	C
ATOM	1250	CG2	VAL	624	-6.973	25.161	7.699	1.00	31.91	A	C
ATOM	1251	C	VAL	624	-9.058	22.959	7.630	1.00	33.28	A	C
ATOM	1252	O	VAL	624	-9.925	22.714	6.789	1.00	32.07	A	O
ATOM	1253	N	ALA	625	-9.346	23.392	8.852	1.00	33.71	A	N
ATOM	1254	CA	ALA	625	-10.723	23.491	9.305	1.00	35.41	A	C
ATOM	1255	CB	ALA	625	-10.971	22.492	10.434	1.00	33.24	A	C
ATOM	1256	C	ALA	625	-11.060	24.900	9.768	1.00	37.55	A	C
ATOM	1257	O	ALA	625	-10.185	25.646	10.200	1.00	38.33	A	O
ATOM	1258	N	CYS	626	-12.335	25.262	9.661	1.00	39.75	A	N
ATOM	1259	CA	CYS	626	-12.840	26.477	10.286	1.00	41.17	A	C
ATOM	1260	C	CYS	626	-13.170	26.144	11.743	1.00	43.54	A	C
ATOM	1261	O	CYS	626	-13.781	25.110	12.024	1.00	44.60	A	O
ATOM	1262	CB	CYS	626	-14.110	26.959	9.575	1.00	39.19	A	C
ATOM	1263	SG	CYS	626	-13.999	27.167	7.765	1.00	41.43	A	S
ATOM	1264	N	GLU	627	-12.770	27.010	12.669	1.00	45.20	A	N
ATOM	1265	CA	GLU	627	-13.077	26.793	14.085	1.00	47.32	A	C
ATOM	1266	CB	GLU	627	-12.212	27.696	14.966	1.00	47.58	A	C
ATOM	1267	CG	GLU	627	-12.348	29.175	14.660	1.00	49.95	A	C
ATOM	1268	CD	GLU	627	-11.403	29.627	13.566	1.00	52.51	A	C
ATOM	1269	OE1	GLU	627	-10.990	30.804	13.592	1.00	55.13	A	O
ATOM	1270	OE2	GLU	627	-11.071	28.810	12.681	1.00	52.16	A	O
ATOM	1271	C	GLU	627	-14.551	27.072	14.362	1.00	47.35	A	C
ATOM	1272	O	GLU	627	-15.252	27.648	13.522	1.00	46.45	A	O
ATOM	1273	N	GLU	628	-15.022	26.665	15.538	1.00	47.46	A	N
ATOM	1274	CA	GLU	628	-16.438	26.788	15.857	1.00	48.46	A	C
ATOM	1275	CB	GLU	628	-16.740	26.197	17.243	1.00	53.92	A	C
ATOM	1276	CG	GLU	628	-16.323	27.076	18.415	1.00	59.91	A	C
ATOM	1277	CD	GLU	628	-16.746	26.502	19.765	1.00	63.80	A	C
ATOM	1278	OE1	GLU	628	-16.934	27.291	20.719	1.00	63.78	A	O
ATOM	1279	OE2	GLU	628	-16.889	25.264	19.873	1.00	66.46	A	O
ATOM	1280	C	GLU	628	-16.840	28.257	15.815	1.00	46.20	A	C
ATOM	1281	O	GLU	628	-16.043	29.141	16.132	1.00	46.72	A	O
ATOM	1282	N	GLY	629	-18.077	28.513	15.410	1.00	42.69	A	N
ATOM	1283	CA	GLY	629	-18.499	29.878	15.171	1.00	40.02	A	C
ATOM	1284	C	GLY	629	-18.411	30.246	13.700	1.00	39.40	A	C
ATOM	1285	O	GLY	629	-19.083	31.173	13.250	1.00	40.26	A	O
ATOM	1286	N	TRP	630	-17.582	29.526	12.947	1.00	37.59	A	N
ATOM	1287	CA	TRP	630	-17.418	29.790	11.515	1.00	35.74	A	C
ATOM	1288	CB	TRP	630	-15.966	30.140	11.191	1.00	33.84	A	C
ATOM	1289	CG	TRP	630	-15.498	31.408	11.807	1.00	36.54	A	C
ATOM	1290	CD2	TRP	630	-15.352	32.675	11.155	1.00	36.10	A	C

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ATOM   1291  CE2 TRP   630     -14.864  33.585  12.118  1.00 38.43      A    C
ATOM   1292  CE3 TRP   630     -15.584  33.130   9.853  1.00 36.07      A    C
ATOM   1293  CD1 TRP   630     -15.104  31.595  13.105  1.00 37.06      A    C
ATOM   1294  NE1 TRP   630     -14.721  32.900  13.297  1.00 36.65      A    N
ATOM   1295  CZ2 TRP   630     -14.607  34.923  11.818  1.00 36.82      A    C
ATOM   1296  CZ3 TRP   630     -15.328  34.455   9.556  1.00 37.24      A    C
ATOM   1297  CH2 TRP   630     -14.844  35.338  10.535  1.00 37.91      A    C
ATOM   1298  C   TRP   630     -17.821  28.570  10.701  1.00 35.13      A    C
ATOM   1299  O   TRP   630     -17.703  27.434  11.165  1.00 35.66      A    O
ATOM   1300  N   THR   631     -18.285  28.804   9.481  1.00 32.78      A    N
ATOM   1301  CA  THR   631     -18.715  27.711   8.626  1.00 31.14      A    C
ATOM   1302  CB  THR   631     -20.210  27.847   8.289  1.00 31.87      A    C
ATOM   1303  OG1 THR   631     -20.961  27.895   9.508  1.00 28.32      A    O
ATOM   1304  CG2 THR   631     -20.686  26.666   7.452  1.00 28.98      A    C
ATOM   1305  C   THR   631     -17.900  27.686   7.337  1.00 30.23      A    C
ATOM   1306  O   THR   631     -17.683  28.714   6.708  1.00 29.72      A    O
ATOM   1307  N   LEU   632     -17.443  26.502   6.956  1.00 29.92      A    N
ATOM   1308  CA  LEU   632     -16.662  26.336   5.739  1.00 28.80      A    C
ATOM   1309  CB  LEU   632     -16.011  24.954   5.746  1.00 27.20      A    C
ATOM   1310  CG  LEU   632     -15.186  24.597   4.510  1.00 30.81      A    C
ATOM   1311  CD1 LEU   632     -14.066  25.609   4.346  1.00 30.24      A    C
ATOM   1312  CD2 LEU   632     -14.624  23.184   4.657  1.00 31.20      A    C
ATOM   1313  C   LEU   632     -17.550  26.493   4.498  1.00 28.43      A    C
ATOM   1314  O   LEU   632     -18.496  25.727   4.309  1.00 28.53      A    O
ATOM   1315  N   THR   633     -17.256  27.486   3.660  1.00 26.00      A    N
ATOM   1316  CA  THR   633     -18.047  27.692   2.449  1.00 27.86      A    C
ATOM   1317  CB  THR   633     -18.520  29.168   2.306  1.00 27.33      A    C
ATOM   1318  OG1 THR   633     -17.382  30.024   2.156  1.00 25.74      A    O
ATOM   1319  CG2 THR   633     -19.320  29.598   3.530  1.00 23.90      A    C
ATOM   1320  C   THR   633     -17.271  27.309   1.188  1.00 29.32      A    C
ATOM   1321  O   THR   633     -17.864  26.985   0.160  1.00 29.29      A    O
ATOM   1322  N   GLY   634     -15.946  27.352   1.267  1.00 29.44      A    N
ATOM   1323  CA  GLY   634     -15.131  27.078   0.096  1.00 29.46      A    C
ATOM   1324  C   GLY   634     -13.850  26.344   0.437  1.00 29.50      A    C
ATOM   1325  O   GLY   634     -13.244  26.581   1.485  1.00 30.22      A    O
ATOM   1326  N   CYS   635     -13.432  25.453  -0.454  1.00 28.04      A    N
ATOM   1327  CA  CYS   635     -12.296  24.581  -0.190  1.00 28.82      A    C
ATOM   1328  C   CYS   635     -11.526  24.342  -1.477  1.00 29.22      A    C
ATOM   1329  O   CYS   635     -12.107  23.936  -2.477  1.00 29.78      A    O
ATOM   1330  CB  CYS   635     -12.798  23.252   0.372  1.00 27.17      A    C
ATOM   1331  SG  CYS   635     -11.559  21.934   0.583  1.00 31.95      A    S
ATOM   1332  N   SER   636     -10.222  24.593  -1.449  1.00 29.87      A    N
ATOM   1333  CA  SER   636      -9.392  24.423  -2.635  1.00 31.98      A    C
ATOM   1334  CB  SER   636      -9.557  25.623  -3.567  1.00 30.53      A    C
ATOM   1335  OG  SER   636      -9.043  26.792  -2.957  1.00 32.60      A    O
ATOM   1336  C   SER   636      -7.916  24.274  -2.276  1.00 33.39      A    C
ATOM   1337  O   SER   636      -7.526  24.394  -1.113  1.00 33.25      A    O
ATOM   1338  N   ALA   637      -7.099  24.011  -3.289  1.00 35.31      A    N
ATOM   1339  CA  ALA   637      -5.653  23.970  -3.117  1.00 37.57      A    C
ATOM   1340  CB  ALA   637      -5.063  22.828  -3.937  1.00 35.81      A    C
ATOM   1341  C   ALA   637      -5.038  25.296  -3.554  1.00 38.81      A    C
ATOM   1342  O   ALA   637      -5.468  25.899  -4.537  1.00 39.80      A    O
ATOM   1343  N   LEU   638      -4.036  25.746  -2.811  1.00 40.54      A    N
ATOM   1344  CA  LEU   638      -3.236  26.893  -3.216  1.00 41.27      A    C
ATOM   1345  CB  LEU   638      -2.161  27.171  -2.163  1.00 41.30      A    C
ATOM   1346  CG  LEU   638      -1.633  28.595  -1.974  1.00 43.45      A    C
ATOM   1347  CD1 LEU   638      -2.751  29.509  -1.502  1.00 43.30      A    C
ATOM   1348  CD2 LEU   638      -0.505  28.577  -0.952  1.00 44.32      A    C
ATOM   1349  C   LEU   638      -2.583  26.506  -4.536  1.00 43.36      A    C
ATOM   1350  O   LEU   638      -2.027  25.415  -4.665  1.00 43.89      A    O
ATOM   1351  N   PRO   639      -2.654  27.386  -5.541  1.00 44.54      A    N
ATOM   1352  CD  PRO   639      -3.210  28.751  -5.535  1.00 42.27      A    C
ATOM   1353  CA  PRO   639      -2.072  27.020  -6.838  1.00 45.55      A    C
ATOM   1354  CB  PRO   639      -2.528  28.144  -7.764  1.00 44.15      A    C
ATOM   1355  CG  PRO   639      -2.731  29.322  -6.849  1.00 44.46      A    C
ATOM   1356  C   PRO   639      -0.551  26.924  -6.745  1.00 48.67      A    C
ATOM   1357  O   PRO   639       0.128  27.928  -6.530  1.00 49.10      A    O
ATOM   1358  N   GLY   640      -0.021  25.714  -6.895  1.00 52.08      A    N
ATOM   1359  CA  GLY   640       1.417  25.517  -6.809  1.00 55.68      A    C
ATOM   1360  C   GLY   640       1.913  24.533  -7.849  1.00 58.10      A    C
ATOM   1361  O   GLY   640       1.201  24.233  -8.802  1.00 58.79      A    O
ATOM   1362  N   THR   641       3.129  24.025  -7.679  1.00 61.04      A    N
ATOM   1363  CA  THR   641       3.606  22.939  -8.532  1.00 64.61      A    C
ATOM   1364  CB  THR   641       5.134  22.731  -8.392  1.00 65.87      A    C
ATOM   1365  OG1 THR   641       5.489  22.650  -7.006  1.00 67.03      A    O
ATOM   1366  CG2 THR   641       5.888  23.877  -9.048  1.00 66.73      A    C
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ATOM   1367  C   THR   641       2.883  21.653  -8.152  1.00 66.27      A    C
ATOM   1368  O   THR   641       3.336  20.548  -8.461  1.00 67.72      A    O
ATOM   1369  N   SER   642       1.740  21.824  -7.492  1.00 67.29      A    N
ATOM   1370  CA  SER   642       0.977  20.732  -6.901  1.00 66.68      A    C
ATOM   1371  CB  SER   642      -0.227  21.301  -6.138  1.00 68.50      A    C
ATOM   1372  OG  SER   642       0.163  22.269  -5.174  1.00 65.92      A    O
ATOM   1373  C   SER   642       0.480  19.719  -7.927  1.00 66.01      A    C
ATOM   1374  O   SER   642       0.079  20.081  -9.031  1.00 66.17      A    O
ATOM   1375  N   HIS   643       0.507  18.445  -7.548  1.00 65.59      A    N
ATOM   1376  CA  HIS   643      -0.260  17.419  -8.250  1.00 63.85      A    C
ATOM   1377  CB  HIS   643       0.565  16.134  -8.445  1.00 68.67      A    C
ATOM   1378  CG  HIS   643       2.049  16.339  -8.398  1.00 73.45      A    C
ATOM   1379  CD2 HIS   643       2.830  17.348  -8.853  1.00 75.15      A    C
ATOM   1380  ND1 HIS   643       2.905  15.423  -7.823  1.00 75.08      A    N
ATOM   1381  CE1 HIS   643       4.148  15.859  -7.925  1.00 76.32      A    C
ATOM   1382  NE2 HIS   643       4.130  17.025  -8.546  1.00 76.69      A    N
ATOM   1383  C   HIS   643      -1.461  17.099  -7.368  1.00 59.62      A    C
ATOM   1384  O   HIS   643      -1.347  16.321  -6.418  1.00 61.00      A    O
ATOM   1385  N   VAL   644      -2.606  17.697  -7.672  1.00 53.01      A    N
ATOM   1386  CA  VAL   644      -3.775  17.546  -6.813  1.00 47.88      A    C
ATOM   1387  CB  VAL   644      -4.312  18.931  -6.395  1.00 48.74      A    C
ATOM   1388  CG1 VAL   644      -5.721  18.813  -5.835  1.00 46.18      A    C
ATOM   1389  CG2 VAL   644      -3.379  19.535  -5.359  1.00 46.52      A    C
ATOM   1390  C   VAL   644      -4.894  16.729  -7.456  1.00 44.30      A    C
ATOM   1391  O   VAL   644      -5.270  16.973  -8.605  1.00 41.49      A    O
ATOM   1392  N   LEU   645      -5.416  15.756  -6.711  1.00 39.48      A    N
ATOM   1393  CA  LEU   645      -6.514  14.921  -7.198  1.00 35.69      A    C
ATOM   1394  CB  LEU   645      -6.636  13.646  -6.359  1.00 34.50      A    C
ATOM   1395  CG  LEU   645      -5.395  12.749  -6.310  1.00 33.63      A    C
ATOM   1396  CD1 LEU   645      -5.668  11.520  -5.449  1.00 29.01      A    C
ATOM   1397  CD2 LEU   645      -5.014  12.337  -7.722  1.00 32.25      A    C
ATOM   1398  C   LEU   645      -7.820  15.699  -7.120  1.00 33.69      A    C
ATOM   1399  O   LEU   645      -8.741  15.482  -7.911  1.00 33.63      A    O
ATOM   1400  N   GLY   646      -7.889  16.615  -6.164  1.00 30.73      A    N
ATOM   1401  CA  GLY   646      -9.099  17.387  -5.980  1.00 29.59      A    C
ATOM   1402  C   GLY   646      -9.210  17.891  -4.559  1.00 29.58      A    C
ATOM   1403  O   GLY   646      -8.271  17.766  -3.767  1.00 29.34      A    O
ATOM   1404  N   ALA   647     -10.362  18.466  -4.238  1.00 27.24      A    N
ATOM   1405  CA  ALA   647     -10.592  19.040  -2.927  1.00 26.99      A    C
ATOM   1406  CB  ALA   647     -10.043  20.453  -2.878  1.00 23.24      A    C
ATOM   1407  C   ALA   647     -12.091  19.044  -2.660  1.00 27.99      A    C
ATOM   1408  O   ALA   647     -12.898  19.142  -3.590  1.00 26.92      A    O
ATOM   1409  N   TYR   648     -12.462  18.923  -1.391  1.00 26.93      A    N
ATOM   1410  CA  TYR   648     -13.865  18.949  -1.011  1.00 28.19      A    C
ATOM   1411  CB  TYR   648     -14.535  17.621  -1.373  1.00 27.10      A    C
ATOM   1412  CG  TYR   648     -13.744  16.397  -0.960  1.00 29.81      A    C
ATOM   1413  CD1 TYR   648     -13.822  15.899   0.336  1.00 28.83      A    C
ATOM   1414  CE1 TYR   648     -13.090  14.788   0.725  1.00 30.03      A    C
ATOM   1415  CD2 TYR   648     -12.912  15.747  -1.862  1.00 29.05      A    C
ATOM   1416  CE2 TYR   648     -12.179  14.635  -1.486  1.00 32.30      A    C
ATOM   1417  CZ  TYR   648     -12.272  14.160  -0.187  1.00 31.60      A    C
ATOM   1418  OH  TYR   648     -11.544  13.057   0.195  1.00 33.44      A    O
ATOM   1419  C   TYR   648     -14.021  19.210   0.477  1.00 30.20      A    C
ATOM   1420  O   TYR   648     -13.126  18.905   1.272  1.00 30.34      A    O
ATOM   1421  N   ALA   649     -15.166  19.768   0.851  1.00 28.57      A    N
ATOM   1422  CA  ALA   649     -15.455  20.020   2.251  1.00 29.86      A    C
ATOM   1423  CB  ALA   649     -16.394  21.210   2.380  1.00 28.48      A    C
ATOM   1424  C   ALA   649     -16.083  18.783   2.884  1.00 32.30      A    C
ATOM   1425  O   ALA   649     -16.920  18.115   2.276  1.00 33.16      A    O
ATOM   1426  N   VAL   650     -15.653  18.469   4.101  1.00 33.30      A    N
ATOM   1427  CA  VAL   650     -16.356  17.509   4.939  1.00 33.70      A    C
ATOM   1428  CB  VAL   650     -15.487  16.269   5.234  1.00 34.68      A    C
ATOM   1429  CG1 VAL   650     -16.177  15.385   6.257  1.00 35.80      A    C
ATOM   1430  CG2 VAL   650     -15.251  15.487   3.954  1.00 33.77      A    C
ATOM   1431  C   VAL   650     -16.683  18.220   6.242  1.00 33.54      A    C
ATOM   1432  O   VAL   650     -15.784  18.580   7.005  1.00 34.44      A    O
ATOM   1433  N   ASP   651     -17.970  18.436   6.484  1.00 32.32      A    N
ATOM   1434  CA  ASP   651     -18.396  19.313   7.560  1.00 33.07      A    C
ATOM   1435  CB  ASP   651     -18.048  18.692   8.914  1.00 34.55      A    C
ATOM   1436  CG  ASP   651     -18.678  17.316   9.101  1.00 37.44      A    C
ATOM   1437  OD1 ASP   651     -19.927  17.218   9.110  1.00 36.19      A    O
ATOM   1438  OD2 ASP   651     -17.925  16.328   9.235  1.00 39.42      A    O
ATOM   1439  C   ASP   651     -17.696  20.658   7.382  1.00 33.97      A    C
ATOM   1440  O   ASP   651     -17.885  21.319   6.360  1.00 34.64      A    O
ATOM   1441  N   ASN   652     -16.884  21.060   8.357  1.00 32.48      A    N
ATOM   1442  CA  ASN   652     -16.196  22.346   8.273  1.00 32.00      A    C
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ATOM   1443  CB  ASN   652     -16.502  23.197   9.511  1.00 32.46      A    C
ATOM   1444  CG  ASN   652     -17.927  23.747   9.500  1.00 35.25      A    C
ATOM   1445  OD1 ASN   652     -18.527  23.930   8.433  1.00 32.30      A    O
ATOM   1446  ND2 ASN   652     -18.474  24.010  10.687  1.00 33.95      A    N
ATOM   1447  C   ASN   652     -14.693  22.176   8.102  1.00 31.47      A    C
ATOM   1448  O   ASN   652     -13.908  23.057   8.451  1.00 30.18      A    O
ATOM   1449  N   THR   653     -14.309  21.033   7.544  1.00 29.69      A    N
ATOM   1450  CA  THR   653     -12.921  20.746   7.225  1.00 28.78      A    C
ATOM   1451  CB  THR   653     -12.510  19.372   7.809  1.00 27.92      A    C
ATOM   1452  OG1 THR   653     -12.589  19.425   9.237  1.00 29.55      A    O
ATOM   1453  CG2 THR   653     -11.095  19.004   7.395  1.00 28.75      A    C
ATOM   1454  C   THR   653     -12.712  20.726   5.707  1.00 28.67      A    C
ATOM   1455  O   THR   653     -13.452  20.061   4.978  1.00 29.58      A    O
ATOM   1456  N   CYS   654     -11.705  21.454   5.236  1.00 28.76      A    N
ATOM   1457  CA  CYS   654     -11.330  21.421   3.827  1.00 27.76      A    C
ATOM   1458  C   CYS   654     -10.320  20.324   3.598  1.00 28.97      A    C
ATOM   1459  O   CYS   654      -9.254  20.321   4.215  1.00 31.24      A    O
ATOM   1460  CB  CYS   654     -10.709  22.750   3.399  1.00 28.74      A    C
ATOM   1461  SG  CYS   654     -10.081  22.798   1.685  1.00 32.18      A    S
ATOM   1462  N   VAL   655     -10.649  19.402   2.700  1.00 28.34      A    N
ATOM   1463  CA  VAL   655      -9.761  18.299   2.378  1.00 28.21      A    C
ATOM   1464  CB  VAL   655     -10.500  16.944   2.459  1.00 28.71      A    C
ATOM   1465  CG1 VAL   655      -9.552  15.821   2.103  1.00 28.30      A    C
ATOM   1466  CG2 VAL   655     -11.058  16.734   3.851  1.00 29.74      A    C
ATOM   1467  C   VAL   655      -9.187  18.455   0.971  1.00 29.61      A    C
ATOM   1468  O   VAL   655      -9.929  18.520  -0.011  1.00 29.60      A    O
ATOM   1469  N   VAL   656      -7.864  18.520   0.877  1.00 29.42      A    N
ATOM   1470  CA  VAL   656      -7.199  18.432  -0.411  1.00 29.18      A    C
ATOM   1471  CB  VAL   656      -6.140  19.550  -0.579  1.00 29.20      A    C
ATOM   1472  CG1 VAL   656      -5.368  19.352  -1.887  1.00 23.76      A    C
ATOM   1473  CG2 VAL   656      -6.827  20.915  -0.575  1.00 25.50      A    C
ATOM   1474  C   VAL   656      -6.526  17.075  -0.522  1.00 30.76      A    C
ATOM   1475  O   VAL   656      -5.797  16.663   0.376  1.00 29.50      A    O
ATOM   1476  N   ARG   657      -6.787  16.378  -1.625  1.00 33.71      A    N
ATOM   1477  CA  ARG   657      -6.201  15.062  -1.863  1.00 35.25      A    C
ATOM   1478  CB  ARG   657      -7.260  14.100  -2.409  1.00 35.66      A    C
ATOM   1479  CG  ARG   657      -8.393  13.791  -1.438  1.00 37.10      A    C
ATOM   1480  CD  ARG   657      -8.058  12.606  -0.541  1.00 37.52      A    C
ATOM   1481  NE  ARG   657      -7.781  11.393  -1.310  1.00 36.14      A    N
ATOM   1482  CZ  ARG   657      -8.701  10.489  -1.637  1.00 39.36      A    C
ATOM   1483  NH1 ARG   657      -8.358   9.416  -2.339  1.00 39.27      A    N
ATOM   1484  NH2 ARG   657      -9.966  10.655  -1.264  1.00 38.06      A    N
ATOM   1485  C   ARG   657      -5.048  15.166  -2.848  1.00 37.95      A    C
ATOM   1486  O   ARG   657      -5.200  15.678  -3.960  1.00 37.69      A    O
ATOM   1487  N   SER   658      -3.888  14.673  -2.433  1.00 41.37      A    N
ATOM   1488  CA  SER   658      -2.685  14.742  -3.254  1.00 44.93      A    C
ATOM   1489  CB  SER   658      -1.502  15.192  -2.397  1.00 45.44      A    C
ATOM   1490  OG  SER   658      -1.412  14.401  -1.223  1.00 50.04      A    O
ATOM   1491  C   SER   658      -2.392  13.378  -3.858  1.00 46.73      A    C
ATOM   1492  O   SER   658      -2.864  12.358  -3.357  1.00 45.37      A    O
ATOM   1493  N   ARG   659      -1.617  13.356  -4.936  1.00 50.91      A    N
ATOM   1494  CA  ARG   659      -1.109  12.095  -5.457  1.00 56.06      A    C
ATOM   1495  CB  ARG   659      -0.700  12.236  -6.920  1.00 60.94      A    C
ATOM   1496  CG  ARG   659       0.009  11.001  -7.473  1.00 66.87      A    C
ATOM   1497  CD  ARG   659      -0.801   9.724  -7.244  1.00 70.25      A    C
ATOM   1498  NE  ARG   659      -0.729   9.250  -5.863  1.00 73.87      A    N
ATOM   1499  CZ  ARG   659      -1.329   8.148  -5.418  1.00 75.97      A    C
ATOM   1500  NH1 ARG   659      -2.049   7.400  -6.247  1.00 76.24      A    N
ATOM   1501  NH2 ARG   659      -1.212   7.792  -4.144  1.00 76.11      A    N
ATOM   1502  C   ARG   659       0.091  11.633  -4.643  1.00 57.33      A    C
ATOM   1503  O   ARG   659      -0.051  10.845  -3.709  1.00 59.34      A    O
ATOM   1504  N   GLU   670       5.942  19.173  -5.234  1.00 59.80      A    N
ATOM   1505  CA  GLU   670       6.378  19.330  -3.843  1.00 59.19      A    C
ATOM   1506  CB  GLU   670       7.326  20.523  -3.727  1.00 60.88      A    C
ATOM   1507  CG  GLU   670       8.652  20.204  -3.026  1.00 65.12      A    C
ATOM   1508  CD  GLU   670       8.570  20.256  -1.508  1.00 68.07      A    C
ATOM   1509  OE1 GLU   670       7.987  21.220  -0.974  1.00 68.75      A    O
ATOM   1510  OE2 GLU   670       9.101  19.341  -0.839  1.00 70.08      A    O
ATOM   1511  C   GLU   670       5.291  19.476  -2.765  1.00 57.96      A    C
ATOM   1512  O   GLU   670       4.489  18.567  -2.544  1.00 56.88      A    O
ATOM   1513  N   ALA   671       5.273  20.628  -2.089  1.00 55.53      A    N
ATOM   1514  CA  ALA   671       4.300  20.874  -1.013  1.00 52.14      A    C
ATOM   1515  CB  ALA   671       4.729  22.075  -0.160  1.00 50.35      A    C
ATOM   1516  C   ALA   671       2.878  21.110  -1.532  1.00 50.50      A    C
ATOM   1517  O   ALA   671       2.685  21.547  -2.660  1.00 49.31      A    O
ATOM   1518  N   VAL   672       1.892  20.811  -0.689  1.00 48.22      A    N
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ATOM   1519  CA  VAL   672       0.485  21.038  -0.993  1.00 46.40      A    C
ATOM   1520  CB  VAL   672      -0.264  19.700  -1.175  1.00 46.60      A    C
ATOM   1521  CG1 VAL   672      -1.765  19.925  -1.123  1.00 45.09      A    C
ATOM   1522  CG2 VAL   672       0.127  19.068  -2.500  1.00 45.84      A    C
ATOM   1523  C   VAL   672      -0.164  21.812   0.140  1.00 44.64      A    C
ATOM   1524  O   VAL   672      -0.012  21.458   1.308  1.00 44.63      A    O
ATOM   1525  N   THR   673      -0.876  22.878  -0.205  1.00 42.97      A    N
ATOM   1526  CA  THR   673      -1.535  23.695   0.803  1.00 42.42      A    C
ATOM   1527  CB  THR   673      -1.014  25.151   0.769  1.00 41.83      A    C
ATOM   1528  OG1 THR   673       0.405  25.156   0.961  1.00 43.57      A    O
ATOM   1529  CG2 THR   673      -1.654  25.968   1.874  1.00 43.03      A    C
ATOM   1530  C   THR   673      -3.052  23.693   0.609  1.00 40.73      A    C
ATOM   1531  O   THR   673      -3.554  23.941  -0.491  1.00 40.35      A    O
ATOM   1532  N   ALA   674      -3.775  23.401   1.684  1.00 37.65      A    N
ATOM   1533  CA  ALA   674      -5.228  23.453   1.651  1.00 36.09      A    C
ATOM   1534  CB  ALA   674      -5.809  22.404   2.589  1.00 32.65      A    C
ATOM   1535  C   ALA   674      -5.700  24.848   2.054  1.00 35.70      A    C
ATOM   1536  O   ALA   674      -5.196  25.433   3.014  1.00 35.06      A    O
ATOM   1537  N   VAL   675      -6.669  25.378   1.313  1.00 33.36      A    N
ATOM   1538  CA  VAL   675      -7.155  26.732   1.554  1.00 31.12      A    C
ATOM   1539  CB  VAL   675      -6.893  27.646   0.344  1.00 32.06      A    C
ATOM   1540  CG1 VAL   675      -7.362  29.057   0.648  1.00 30.35      A    C
ATOM   1541  CG2 VAL   675      -5.423  27.625  -0.015  1.00 31.11      A    C
ATOM   1542  C   VAL   675      -8.652  26.721   1.814  1.00 32.06      A    C
ATOM   1543  O   VAL   675      -9.436  26.300   0.962  1.00 33.53      A    O
ATOM   1544  N   ALA   676      -9.046  27.191   2.991  1.00 31.39      A    N
ATOM   1545  CA  ALA   676     -10.446  27.210   3.369  1.00 31.28      A    C
ATOM   1546  CB  ALA   676     -10.631  26.537   4.731  1.00 30.37      A    C
ATOM   1547  C   ALA   676     -10.965  28.638   3.425  1.00 32.21      A    C
ATOM   1548  O   ALA   676     -10.342  29.513   4.026  1.00 32.29      A    O
ATOM   1549  N   ILE   677     -12.112  28.871   2.799  1.00 30.97      A    N
ATOM   1550  CA  ILE   677     -12.853  30.098   3.046  1.00 31.18      A    C
ATOM   1551  CB  ILE   677     -13.511  30.625   1.755  1.00 30.16      A    C
ATOM   1552  CG2 ILE   677     -14.405  31.810   2.071  1.00 28.01      A    C
ATOM   1553  CG1 ILE   677     -12.424  31.014   0.749  1.00 29.28      A    C
ATOM   1554  CD1 ILE   677     -12.949  31.276  -0.653  1.00 31.33      A    C
ATOM   1555  C   ILE   677     -13.925  29.812   4.094  1.00 32.12      A    C
ATOM   1556  O   ILE   677     -14.759  28.916   3.925  1.00 29.55      A    O
ATOM   1557  N   CYS   678     -13.880  30.576   5.181  1.00 33.00      A    N
ATOM   1558  CA  CYS   678     -14.780  30.386   6.316  1.00 34.13      A    C
ATOM   1559  C   CYS   678     -15.661  31.617   6.478  1.00 33.65      A    C
ATOM   1560  O   CYS   678     -15.180  32.744   6.384  1.00 33.63      A    O
ATOM   1561  CB  CYS   678     -13.966  30.179   7.594  1.00 35.39      A    C
ATOM   1562  SG  CYS   678     -12.794  28.787   7.523  1.00 37.76      A    S
ATOM   1563  N   CYS   679     -16.949  31.412   6.718  1.00 33.05      A    N
ATOM   1564  CA  CYS   679     -17.842  32.547   6.892  1.00 36.46      A    C
ATOM   1565  C   CYS   679     -18.750  32.419   8.113  1.00 39.97      A    C
ATOM   1566  O   CYS   679     -18.970  31.324   8.639  1.00 37.89      A    O
ATOM   1567  CB  CYS   679     -18.712  32.734   5.658  1.00 36.27      A    C
ATOM   1568  SG  CYS   679     -17.854  32.830   4.054  1.00 36.27      A    S
ATOM   1569  N   ARG   680     -19.282  33.556   8.547  1.00 43.34      A    N
ATOM   1570  CA  ARG   680     -20.257  33.591   9.630  1.00 48.28      A    C
ATOM   1571  CB  ARG   680     -19.547  33.641  10.983  1.00 47.10      A    C
ATOM   1572  CG  ARG   680     -18.769  34.919  11.195  1.00 50.25      A    C
ATOM   1573  CD  ARG   680     -18.249  35.029  12.610  1.00 50.93      A    C
ATOM   1574  NE  ARG   680     -17.474  36.250  12.786  1.00 53.09      A    N
ATOM   1575  CZ  ARG   680     -16.716  36.504  13.846  1.00 53.83      A    C
ATOM   1576  NH1 ARG   680     -16.043  37.645  13.919  1.00 54.26      A    N
ATOM   1577  NH2 ARG   680     -16.629  35.617  14.829  1.00 53.05      A    N
ATOM   1578  C   ARG   680     -21.146  34.820   9.479  1.00 49.82      A    C
ATOM   1579  O   ARG   680     -20.924  35.657   8.600  1.00 49.14      A    O
ATOM   1580  N   SER   681     -22.152  34.917  10.339  1.00 53.31      A    N
ATOM   1581  CA  SER   681     -23.029  36.083  10.378  1.00 58.05      A    C
ATOM   1582  CB  SER   681     -24.423  35.673  10.837  1.00 58.41      A    C
ATOM   1583  OG  SER   681     -24.392  35.272  12.195  1.00 60.93      A    O
ATOM   1584  C   SER   681     -22.486  37.127  11.346  1.00 59.77      A    C
ATOM   1585  O   SER   681     -21.714  36.806  12.248  1.00 60.55      A    O
ATOM   1586  N   ARG   682     -22.896  38.375  11.154  1.00 62.76      A    N
ATOM   1587  CA  ARG   682     -22.616  39.429  12.122  1.00 66.03      A    C
ATOM   1588  CB  ARG   682     -21.647  40.448  11.528  1.00 68.33      A    C
ATOM   1589  CG  ARG   682     -20.316  39.874  11.085  1.00 71.05      A    C
ATOM   1590  CD  ARG   682     -19.510  40.941  10.368  1.00 73.61      A    C
ATOM   1591  NE  ARG   682     -20.383  41.861   9.641  1.00 76.11      A    N
ATOM   1592  CZ  ARG   682     -19.966  42.729   8.723  1.00 76.34      A    C
ATOM   1593  NH1 ARG   682     -20.839  43.523   8.117  1.00 74.95      A    N
ATOM   1594  NH2 ARG   682     -18.678  42.801   8.409  1.00 77.06      A    N
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ATOM   1595  C   ARG   682     -23.909  40.138  12.514  1.00 66.85      A    C
ATOM   1596  O   ARG   682     -24.947  39.865  11.873  1.00 67.78      A    O
ATOM   1597  OXT ARG   682     -23.867  40.966  13.448  1.00 68.38      A    O
TER    1598      ARG   682                                              A
ATOM   3134  CB  ALA    -2     -22.599  17.038 -50.667  1.00 30.97      L1   C
ATOM   3135  C   ALA    -2     -20.735  18.001 -49.294  1.00 31.14      L1   C
ATOM   3136  O   ALA    -2     -19.631  17.468 -49.156  1.00 30.83      L1   O
ATOM   3137  N   ALA    -2     -20.438  17.670 -51.719  1.00 31.98      L1   N
ATOM   3138  CA  ALA    -2     -21.422  18.028 -50.655  1.00 32.78      L1   C
ATOM   3139  N   LEU    -1     -21.382  18.582 -48.290  1.00 30.72      L1   N
ATOM   3140  CA  LEU    -1     -20.904  18.443 -46.923  1.00 31.40      L1   C
ATOM   3141  CB  LEU    -1     -20.620  19.810 -46.300  1.00 30.42      L1   C
ATOM   3142  CG  LEU    -1     -20.062  19.746 -44.872  1.00 32.48      L1   C
ATOM   3143  CD1 LEU    -1     -18.735  19.007 -44.874  1.00 32.58      L1   C
ATOM   3144  CD2 LEU    -1     -19.875  21.146 -44.314  1.00 31.47      L1   C
ATOM   3145  C   LEU    -1     -21.939  17.701 -46.090  1.00 32.90      L1   C
ATOM   3146  O   LEU    -1     -23.076  18.154 -45.930  1.00 31.46      L1   O
ATOM   3147  N   GLN     1     -21.543  16.551 -45.565  1.00 32.45      L1   N
ATOM   3148  CA  GLN     1     -22.440  15.769 -44.739  1.00 36.30      L1   C
ATOM   3149  CB  GLN     1     -22.229  14.271 -45.006  1.00 39.00      L1   C
ATOM   3150  CG  GLN     1     -23.162  13.354 -44.229  1.00 46.21      L1   C
ATOM   3151  CD  GLN     1     -23.290  11.970 -44.857  1.00 51.70      L1   C
ATOM   3152  OE1 GLN     1     -24.374  11.383 -44.867  1.00 55.34      L1   O
ATOM   3153  NE2 GLN     1     -22.185  11.444 -45.384  1.00 50.89      L1   N
ATOM   3154  C   GLN     1     -22.148  16.113 -43.282  1.00 36.73      L1   C
ATOM   3155  O   GLN     1     -21.038  15.904 -42.801  1.00 39.33      L1   O
ATOM   3156  N   SER     2     -23.143  16.660 -42.592  1.00 34.09      L1   N
ATOM   3157  CA  SER     2     -22.984  17.045 -41.200  1.00 32.26      L1   C
ATOM   3158  CB  SER     2     -23.663  18.394 -40.951  1.00 33.35      L1   C
ATOM   3159  OG  SER     2     -22.995  19.426 -41.660  1.00 36.24      L1   O
ATOM   3160  C   SER     2     -23.579  15.975 -40.290  1.00 31.17      L1   C
ATOM   3161  O   SER     2     -24.551  15.314 -40.651  1.00 29.93      L1   O
ATOM   3162  N   VAL     3     -22.990  15.806 -39.111  1.00 29.66      L1   N
ATOM   3163  CA  VAL     3     -23.345  14.692 -38.242  1.00 27.57      L1   C
ATOM   3164  CB  VAL     3     -22.173  14.325 -37.304  1.00 26.77      L1   C
ATOM   3165  CG1 VAL     3     -22.604  13.235 -36.328  1.00 20.64      L1   C
ATOM   3166  CG2 VAL     3     -20.970  13.859 -38.135  1.00 24.71      L1   C
ATOM   3167  C   VAL     3     -24.573  14.995 -37.403  1.00 28.78      L1   C
ATOM   3168  O   VAL     3     -25.360  14.102 -37.110  1.00 29.90      L1   O
ATOM   3169  N   LEU     4     -24.736  16.256 -37.013  1.00 28.16      L1   N
ATOM   3170  CA  LEU     4     -25.909  16.661 -36.239  1.00 28.07      L1   C
ATOM   3171  CB  LEU     4     -25.540  17.780 -35.261  1.00 25.10      L1   C
ATOM   3172  CG  LEU     4     -24.396  17.481 -34.289  1.00 27.51      L1   C
ATOM   3173  CD1 LEU     4     -24.060  18.739 -33.483  1.00 27.28      L1   C
ATOM   3174  CD2 LEU     4     -24.793  16.341 -33.367  1.00 27.59      L1   C
ATOM   3175  C   LEU     4     -26.996  17.146 -37.190  1.00 26.91      L1   C
ATOM   3176  O   LEU     4     -26.701  17.620 -38.282  1.00 25.87      L1   O
ATOM   3177  N   THR     5     -28.251  17.031 -36.777  1.00 27.45      L1   N
ATOM   3178  CA  THR     5     -29.365  17.405 -37.650  1.00 29.69      L1   C
ATOM   3179  CB  THR     5     -30.419  16.281 -37.709  1.00 30.65      L1   C
ATOM   3180  OG1 THR     5     -29.813  15.091 -38.227  1.00 32.80      L1   O
ATOM   3181  CG2 THR     5     -31.584  16.682 -38.615  1.00 30.25      L1   C
ATOM   3182  C   THR     5     -30.062  18.693 -37.216  1.00 29.39      L1   C
ATOM   3183  O   THR     5     -30.597  18.773 -36.113  1.00 28.74      L1   O
ATOM   3184  N   GLN     6     -30.048  19.696 -38.093  1.00 27.91      L1   N
ATOM   3185  CA  GLN     6     -30.806  20.929 -37.885  1.00 28.70      L1   C
ATOM   3186  CB  GLN     6     -29.889  22.159 -37.866  1.00 26.66      L1   C
ATOM   3187  CG  GLN     6     -28.913  22.258 -36.721  1.00 24.05      L1   C
ATOM   3188  CD  GLN     6     -28.010  23.468 -36.872  1.00 25.09      L1   C
ATOM   3189  OE1 GLN     6     -26.843  23.341 -37.243  1.00 27.47      L1   O
ATOM   3190  NE2 GLN     6     -28.548  24.652 -36.597  1.00 22.42      L1   N
ATOM   3191  C   GLN     6     -31.770  21.109 -39.044  1.00 28.56      L1   C
ATOM   3192  O   GLN     6     -31.475  20.719 -40.170  1.00 27.37      L1   O
ATOM   3193  N   PRO     7     -32.921  21.745 -38.789  1.00 30.02      L1   N
ATOM   3194  CD  PRO     7     -33.416  22.218 -37.483  1.00 30.00      L1   C
ATOM   3195  CA  PRO     7     -33.756  22.206 -39.904  1.00 29.84      L1   C
ATOM   3196  CB  PRO     7     -34.944  22.876 -39.215  1.00 30.46      L1   C
ATOM   3197  CG  PRO     7     -34.421  23.278 -37.859  1.00 31.08      L1   C
ATOM   3198  C   PRO     7     -32.961  23.186 -40.761  1.00 30.79      L1   C
ATOM   3199  O   PRO     7     -32.206  24.007 -40.242  1.00 30.95      L1   O
ATOM   3200  N   PRO     8     -33.113  23.100 -42.087  1.00 29.99      L1   N
ATOM   3201  CD  PRO     8     -33.901  22.060 -42.767  1.00 29.60      L1   C
ATOM   3202  CA  PRO     8     -32.380  23.946 -43.036  1.00 30.24      L1   C
ATOM   3203  CB  PRO     8     -32.755  23.369 -44.404  1.00 30.10      L1   C
ATOM   3204  CG  PRO     8     -33.254  21.990 -44.113  1.00 31.61      L1   C
ATOM   3205  C   PRO     8     -32.747  25.428 -42.928  1.00 31.73      L1   C
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ATOM   3206  O   PRO     8     -31.943  26.308 -43.258  1.00 31.46      L1   O
ATOM   3207  N   SER     9     -33.960  25.707 -42.467  1.00 30.72      L1   N
ATOM   3208  CA  SER     9     -34.446  27.080 -42.450  1.00 32.53      L1   C
ATOM   3209  CB  SER     9     -35.043  27.456 -43.808  1.00 35.18      L1   C
ATOM   3210  OG  SER     9     -36.252  26.743 -44.038  1.00 39.78      L1   O
ATOM   3211  C   SER     9     -35.494  27.298 -41.382  1.00 32.20      L1   C
ATOM   3212  O   SER     9     -36.151  26.359 -40.933  1.00 32.14      L1   O
ATOM   3213  N   ALA    10     -35.637  28.556 -40.982  1.00 32.09      L1   N
ATOM   3214  CA  ALA    10     -36.668  28.970 -40.049  1.00 30.01      L1   C
ATOM   3215  CB  ALA    10     -36.196  28.744 -38.611  1.00 29.34      L1   C
ATOM   3216  C   ALA    10     -36.943  30.453 -40.294  1.00 31.41      L1   C
ATOM   3217  O   ALA    10     -36.162  31.139 -40.958  1.00 31.03      L1   O
ATOM   3218  N   SER    11     -38.058  30.946 -39.770  1.00 30.95      L1   N
ATOM   3219  CA  SER    11     -38.366  32.364 -39.876  1.00 33.18      L1   C
ATOM   3220  CB  SER    11     -39.055  32.667 -41.205  1.00 31.83      L1   C
ATOM   3221  OG  SER    11     -40.290  31.985 -41.292  1.00 34.06      L1   O
ATOM   3222  C   SER    11     -39.255  32.810 -38.731  1.00 33.60      L1   C
ATOM   3223  O   SER    11     -40.016  32.023 -38.175  1.00 34.21      L1   O
ATOM   3224  N   GLY    12     -39.143  34.084 -38.379  1.00 33.24      L1   N
ATOM   3225  CA  GLY    12     -39.983  34.638 -37.344  1.00 34.06      L1   C
ATOM   3226  C   GLY    12     -40.221  36.111 -37.594  1.00 34.78      L1   C
ATOM   3227  O   GLY    12     -39.510  36.738 -38.377  1.00 35.73      L1   O
ATOM   3228  N   THR    13     -41.224  36.664 -36.926  1.00 35.43      L1   N
ATOM   3229  CA  THR    13     -41.545  38.077 -37.055  1.00 35.76      L1   C
ATOM   3230  CB  THR    13     -43.057  38.299 -36.915  1.00 37.03      L1   C
ATOM   3231  OG1 THR    13     -43.732  37.621 -37.980  1.00 40.63      L1   O
ATOM   3232  CG2 THR    13     -43.389  39.781 -36.959  1.00 38.80      L1   C
ATOM   3233  C   THR    13     -40.834  38.834 -35.949  1.00 34.79      L1   C
ATOM   3234  O   THR    13     -40.768  38.358 -34.817  1.00 33.06      L1   O
ATOM   3235  N   PRO    14     -40.295  40.024 -36.261  1.00 33.81      L1   N
ATOM   3236  CD  PRO    14     -40.243  40.682 -37.579  1.00 33.59      L1   C
ATOM   3237  CA  PRO    14     -39.678  40.845 -35.213  1.00 35.17      L1   C
ATOM   3238  CB  PRO    14     -39.510  42.210 -35.881  1.00 35.17      L1   C
ATOM   3239  CG  PRO    14     -39.338  41.880 -37.339  1.00 32.62      L1   C
ATOM   3240  C   PRO    14     -40.562  40.904 -33.970  1.00 37.04      L1   C
ATOM   3241  O   PRO    14     -41.788  40.939 -34.076  1.00 36.13      L1   O
ATOM   3242  N   GLY    15     -39.933  40.880 -32.798  1.00 37.53      L1   N
ATOM   3243  CA  GLY    15     -40.684  40.885 -31.554  1.00 37.21      L1   C
ATOM   3244  C   GLY    15     -41.091  39.514 -31.044  1.00 37.71      L1   C
ATOM   3245  O   GLY    15     -41.394  39.354 -29.864  1.00 39.10      L1   O
ATOM   3246  N   GLN    16     -41.101  38.515 -31.918  1.00 38.28      L1   N
ATOM   3247  CA  GLN    16     -41.542  37.184 -31.514  1.00 39.95      L1   C
ATOM   3248  CB  GLN    16     -42.263  36.488 -32.673  1.00 42.22      L1   C
ATOM   3249  CG  GLN    16     -43.514  37.217 -33.166  1.00 49.57      L1   C
ATOM   3250  CD  GLN    16     -44.608  37.318 -32.108  1.00 53.19      L1   C
ATOM   3251  OE1 GLN    16     -45.367  36.371 -31.889  1.00 55.70      L1   O
ATOM   3252  NE2 GLN    16     -44.693  38.472 -31.449  1.00 53.13      L1   N
ATOM   3253  C   GLN    16     -40.393  36.301 -31.017  1.00 39.30      L1   C
ATOM   3254  O   GLN    16     -39.232  36.715 -30.998  1.00 36.61      L1   O
ATOM   3255  N   ARG    17     -40.743  35.085 -30.608  1.00 39.04      L1   N
ATOM   3256  CA  ARG    17     -39.782  34.093 -30.142  1.00 40.32      L1   C
ATOM   3257  CB  ARG    17     -40.225  33.551 -28.779  1.00 40.01      L1   C
ATOM   3258  CG  ARG    17     -39.384  32.406 -28.239  1.00 43.34      L1   C
ATOM   3259  CD  ARG    17     -39.923  31.930 -26.898  1.00 41.71      L1   C
ATOM   3260  NE  ARG    17     -39.086  30.906 -26.277  1.00 43.61      L1   N
ATOM   3261  CZ  ARG    17     -39.155  29.610 -26.565  1.00 43.68      L1   C
ATOM   3262  NH1 ARG    17     -40.019  29.178 -27.471  1.00 44.38      L1   N
ATOM   3263  NH2 ARG    17     -38.376  28.740 -25.933  1.00 43.92      L1   N
ATOM   3264  C   ARG    17     -39.697  32.949 -31.148  1.00 39.25      L1   C
ATOM   3265  O   ARG    17     -40.722  32.397 -31.548  1.00 40.22      L1   O
ATOM   3266  N   VAL    18     -38.480  32.601 -31.562  1.00 38.21      L1   N
ATOM   3267  CA  VAL    18     -38.269  31.428 -32.410  1.00 36.63      L1   C
ATOM   3268  CB  VAL    18     -37.688  31.814 -33.790  1.00 37.42      L1   C
ATOM   3269  CG1 VAL    18     -38.642  32.740 -34.510  1.00 37.93      L1   C
ATOM   3270  CG2 VAL    18     -36.331  32.479 -33.624  1.00 37.49      L1   C
ATOM   3271  C   VAL    18     -37.320  30.430 -31.755  1.00 36.06      L1   C
ATOM   3272  O   VAL    18     -36.493  30.800 -30.918  1.00 37.18      L1   O
ATOM   3273  N   THR    19     -37.447  29.161 -32.127  1.00 34.19      L1   N
ATOM   3274  CA  THR    19     -36.532  28.148 -31.635  1.00 33.85      L1   C
ATOM   3275  CB  THR    19     -37.231  27.152 -30.699  1.00 34.73      L1   C
ATOM   3276  OG1 THR    19     -38.256  26.459 -31.422  1.00 36.14      L1   O
ATOM   3277  CG2 THR    19     -37.839  27.875 -29.510  1.00 36.05      L1   C
ATOM   3278  C   THR    19     -35.932  27.367 -32.788  1.00 33.77      L1   C
ATOM   3279  O   THR    19     -36.581  27.136 -33.804  1.00 34.31      L1   O
ATOM   3280  N   ILE    20     -34.680  26.964 -32.627  1.00 32.67      L1   N
ATOM   3281  CA  ILE    20     -34.013  26.136 -33.619  1.00 30.93      L1   C
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ATOM   3282  CB  ILE    20     -32.856  26.902 -34.267  1.00 30.89      L1    C
ATOM   3283  CG2 ILE    20     -32.090  25.991 -35.202  1.00 32.28      L1    C
ATOM   3284  CG1 ILE    20     -33.410  28.121 -35.010  1.00 31.02      L1    C
ATOM   3285  CD1 ILE    20     -32.348  29.096 -35.461  1.00 29.96      L1    C
ATOM   3286  C   ILE    20     -33.479  24.902 -32.912  1.00 29.12      L1    C
ATOM   3287  O   ILE    20     -32.825  25.007 -31.877  1.00 27.11      L1    O
ATOM   3288  N   SER    21     -33.772  23.731 -33.460  1.00 28.13      L1    N
ATOM   3289  CA  SER    21     -33.418  22.493 -32.791  1.00 27.04      L1    C
ATOM   3290  CB  SER    21     -34.577  21.503 -32.857  1.00 28.51      L1    C
ATOM   3291  OG  SER    21     -34.646  20.916 -34.144  1.00 36.31      L1    O
ATOM   3292  C   SER    21     -32.183  21.856 -33.404  1.00 27.38      L1    C
ATOM   3293  O   SER    21     -31.850  22.087 -34.576  1.00 26.13      L1    O
ATOM   3294  N   CYS    22     -31.514  21.040 -32.599  1.00 26.91      L1    N
ATOM   3295  CA  CYS    22     -30.300  20.349 -33.012  1.00 28.14      L1    C
ATOM   3296  C   CYS    22     -30.378  18.953 -32.407  1.00 27.39      L1    C
ATOM   3297  O   CYS    22     -30.482  18.805 -31.191  1.00 26.72      L1    O
ATOM   3298  CB  CYS    22     -29.078  21.109 -32.470  1.00 28.78      L1    C
ATOM   3299  SG  CYS    22     -27.428  20.365 -32.716  1.00 33.98      L1    S
ATOM   3300  N   SER    23     -30.349  17.926 -33.246  1.00 26.59      L1    N
ATOM   3301  CA  SER    23     -30.434  16.574 -32.722  1.00 29.26      L1    C
ATOM   3302  CB  SER    23     -31.691  15.875 -33.244  1.00 30.37      L1    C
ATOM   3303  OG  SER    23     -31.715  15.896 -34.653  1.00 40.04      L1    O
ATOM   3304  C   SER    23     -29.202  15.750 -33.053  1.00 27.58      L1    C
ATOM   3305  O   SER    23     -28.689  15.783 -34.171  1.00 25.14      L1    O
ATOM   3306  N   GLY    24     -28.734  15.017 -32.049  1.00 27.83      L1    N
ATOM   3307  CA  GLY    24     -27.548  14.204 -32.195  1.00 28.19      L1    C
ATOM   3308  C   GLY    24     -27.832  12.832 -31.632  1.00 29.00      L1    C
ATOM   3309  O   GLY    24     -28.902  12.268 -31.867  1.00 29.40      L1    O
ATOM   3310  N   SER    25     -26.886  12.291 -30.878  1.00 26.84      L1    N
ATOM   3311  CA  SER    25     -27.045  10.942 -30.372  1.00 27.01      L1    C
ATOM   3312  CB  SER    25     -26.747   9.938 -31.478  1.00 26.36      L1    C
ATOM   3313  OG  SER    25     -25.400  10.061 -31.879  1.00 26.75      L1    O
ATOM   3314  C   SER    25     -26.113  10.705 -29.209  1.00 26.30      L1    C
ATOM   3315  O   SER    25     -25.447  11.629 -28.746  1.00 27.16      L1    O
ATOM   3316  N   SER    26     -26.066   9.462 -28.742  1.00 25.37      L1    N
ATOM   3317  CA  SER    26     -25.345   9.137 -27.522  1.00 25.52      L1    C
ATOM   3318  CB  SER    26     -25.588   7.678 -27.143  1.00 26.57      L1    C
ATOM   3319  OG  SER    26     -25.038   6.804 -28.119  1.00 32.72      L1    O
ATOM   3320  C   SER    26     -23.847   9.390 -27.673  1.00 25.31      L1    C
ATOM   3321  O   SER    26     -23.153   9.613 -26.688  1.00 26.31      L1    O
ATOM   3322  N   SER    27     -23.347   9.362 -28.904  1.00 25.12      L1    N
ATOM   3323  CA  SER    27     -21.916   9.549 -29.129  1.00 23.38      L1    C
ATOM   3324  CB  SER    27     -21.495   8.948 -30.472  1.00 22.37      L1    C
ATOM   3325  OG  SER    27     -21.943   9.746 -31.551  1.00 24.28      L1    O
ATOM   3326  C   SER    27     -21.521  11.023 -29.085  1.00 24.26      L1    C
ATOM   3327  O   SER    27     -20.342  11.342 -28.959  1.00 23.93      L1    O
ATOM   3328  N   ASN    28     -22.497  11.926 -29.195  1.00 23.53      L1    N
ATOM   3329  CA  ASN    28     -22.197  13.345 -29.020  1.00 23.52      L1    C
ATOM   3330  CB  ASN    28     -22.302  14.111 -30.361  1.00 21.17      L1    C
ATOM   3331  CG  ASN    28     -23.467  13.656 -31.228  1.00 23.34      L1    C
ATOM   3332  OD1 ASN    28     -24.629  13.895 -30.908  1.00 23.92      L1    O
ATOM   3333  ND2 ASN    28     -23.154  13.009 -32.345  1.00 21.27      L1    N
ATOM   3334  C   ASN    28     -23.028  14.033 -27.937  1.00 23.95      L1    C
ATOM   3335  O   ASN    28     -22.578  14.156 -26.799  1.00 25.36      L1    O
ATOM   3336  N   ILE    29     -24.230  14.486 -28.267  1.00 24.55      L1    N
ATOM   3337  CA  ILE    29     -24.995  15.263 -27.300  1.00 24.06      L1    C
ATOM   3338  CB  ILE    29     -26.300  15.799 -27.929  1.00 26.12      L1    C
ATOM   3339  CG2 ILE    29     -27.128  16.554 -26.883  1.00 21.66      L1    C
ATOM   3340  CG1 ILE    29     -25.951  16.716 -29.103  1.00 21.86      L1    C
ATOM   3341  CD1 ILE    29     -27.146  17.356 -29.766  1.00 26.70      L1    C
ATOM   3342  C   ILE    29     -25.313  14.456 -26.040  1.00 25.43      L1    C
ATOM   3343  O   ILE    29     -25.448  15.021 -24.956  1.00 24.34      L1    O
ATOM   3344  N   GLY    30     -25.401  13.134 -26.170  1.00 25.71      L1    N
ATOM   3345  CA  GLY    30     -25.640  12.301 -25.000  1.00 25.17      L1    C
ATOM   3346  C   GLY    30     -24.619  12.467 -23.875  1.00 28.74      L1    C
ATOM   3347  O   GLY    30     -24.952  12.284 -22.702  1.00 28.98      L1    O
ATOM   3348  N   SER    31     -23.376  12.806 -24.217  1.00 26.07      L1    N
ATOM   3349  CA  SER    31     -22.342  13.023 -23.207  1.00 25.52      L1    C
ATOM   3350  CB  SER    31     -21.104  12.176 -23.511  1.00 25.93      L1    C
ATOM   3351  OG  SER    31     -21.357  10.799 -23.314  1.00 27.84      L1    O
ATOM   3352  C   SER    31     -21.905  14.484 -23.092  1.00 26.39      L1    C
ATOM   3353  O   SER    31     -21.490  14.925 -22.022  1.00 25.97      L1    O
ATOM   3354  N   ASN    32     -21.991  15.227 -24.192  1.00 25.12      L1    N
ATOM   3355  CA  ASN    32     -21.240  16.471 -24.316  1.00 25.92      L1    C
ATOM   3356  CB  ASN    32     -20.279  16.342 -25.494  1.00 22.78      L1    C
ATOM   3357  CG  ASN    32     -19.380  15.133 -25.362  1.00 25.36      L1    C
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ATOM   3358  OD1 ASN    32     -18.840  14.864 -24.284  1.00 24.71      L1   O
ATOM   3359  ND2 ASN    32     -19.220  14.387 -26.451  1.00 23.92      L1   N
ATOM   3360  C   ASN    32     -22.087  17.742 -24.445  1.00 26.14      L1   C
ATOM   3361  O   ASN    32     -23.258  17.697 -24.833  1.00 26.61      L1   O
ATOM   3362  N   THR    33     -21.477  18.873 -24.106  1.00 25.64      L1   N
ATOM   3363  CA  THR    33     -22.153  20.167 -24.125  1.00 25.44      L1   C
ATOM   3364  CB  THR    33     -21.272  21.272 -23.484  1.00 26.18      L1   C
ATOM   3365  OG1 THR    33     -20.054  21.407 -24.231  1.00 27.99      L1   O
ATOM   3366  CG2 THR    33     -20.937  20.925 -22.040  1.00 25.80      L1   C
ATOM   3367  C   THR    33     -22.478  20.589 -25.553  1.00 24.65      L1   C
ATOM   3368  O   THR    33     -21.778  20.220 -26.492  1.00 23.55      L1   O
ATOM   3369  N   VAL    34     -23.542  21.367 -25.713  1.00 22.97      L1   N
ATOM   3370  CA  VAL    34     -23.901  21.889 -27.024  1.00 20.22      L1   C
ATOM   3371  CB  VAL    34     -25.422  21.766 -27.273  1.00 20.79      L1   C
ATOM   3372  CG1 VAL    34     -25.765  22.309 -28.640  1.00 17.13      L1   C
ATOM   3373  CG2 VAL    34     -25.849  20.303 -27.162  1.00 18.86      L1   C
ATOM   3374  C   VAL    34     -23.497  23.349 -27.126  1.00 20.72      L1   C
ATOM   3375  O   VAL    34     -23.588  24.092 -26.153  1.00 20.35      L1   O
ATOM   3376  N   ASN    35     -23.062  23.760 -28.311  1.00 21.11      L1   N
ATOM   3377  CA  ASN    35     -22.553  25.104 -28.515  1.00 20.37      L1   C
ATOM   3378  CB  ASN    35     -21.028  25.068 -28.673  1.00 20.30      L1   C
ATOM   3379  CG  ASN    35     -20.345  24.360 -27.513  1.00 20.02      L1   C
ATOM   3380  OD1 ASN    35     -20.061  24.968 -26.477  1.00 20.69      L1   O
ATOM   3381  ND2 ASN    35     -20.092  23.069 -27.675  1.00 18.74      L1   N
ATOM   3382  C   ASN    35     -23.190  25.664 -29.765  1.00 23.63      L1   C
ATOM   3383  O   ASN    35     -23.363  24.943 -30.750  1.00 25.23      L1   O
ATOM   3384  N   TRP    36     -23.535  26.950 -29.728  1.00 24.33      L1   N
ATOM   3385  CA  TRP    36     -24.249  27.581 -30.828  1.00 23.53      L1   C
ATOM   3386  CB  TRP    36     -25.637  28.023 -30.361  1.00 24.65      L1   C
ATOM   3387  CG  TRP    36     -26.565  26.884 -30.058  1.00 23.30      L1   C
ATOM   3388  CD2 TRP    36     -27.466  26.254 -30.973  1.00 21.45      L1   C
ATOM   3389  CE2 TRP    36     -28.163  25.261 -30.257  1.00 22.89      L1   C
ATOM   3390  CE3 TRP    36     -27.754  26.436 -32.330  1.00 24.38      L1   C
ATOM   3391  CD1 TRP    36     -26.744  26.264 -28.853  1.00 22.85      L1   C
ATOM   3392  NE1 TRP    36     -27.706  25.284 -28.965  1.00 22.07      L1   N
ATOM   3393  CZ2 TRP    36     -29.131  24.452 -30.853  1.00 23.37      L1   C
ATOM   3394  CZ3 TRP    36     -28.718  25.630 -32.920  1.00 24.94      L1   C
ATOM   3395  CH2 TRP    36     -29.393  24.652 -32.181  1.00 23.94      L1   C
ATOM   3396  C   TRP    36     -23.492  28.783 -31.393  1.00 24.76      L1   C
ATOM   3397  O   TRP    36     -22.862  29.539 -30.651  1.00 24.29      L1   O
ATOM   3398  N   TYR    37     -23.580  28.950 -32.710  1.00 23.23      L1   N
ATOM   3399  CA  TYR    37     -22.890  30.017 -33.419  1.00 25.41      L1   C
ATOM   3400  CB  TYR    37     -21.710  29.444 -34.223  1.00 23.97      L1   C
ATOM   3401  CG  TYR    37     -20.751  28.674 -33.348  1.00 24.70      L1   C
ATOM   3402  CD1 TYR    37     -21.020  27.357 -32.993  1.00 23.14      L1   C
ATOM   3403  CE1 TYR    37     -20.220  26.679 -32.095  1.00 24.44      L1   C
ATOM   3404  CD2 TYR    37     -19.639  29.291 -32.789  1.00 21.55      L1   C
ATOM   3405  CE2 TYR    37     -18.826  28.618 -31.887  1.00 23.33      L1   C
ATOM   3406  CZ  TYR    37     -19.127  27.312 -31.541  1.00 23.69      L1   C
ATOM   3407  OH  TYR    37     -18.359  26.638 -30.618  1.00 20.32      L1   O
ATOM   3408  C   TYR    37     -23.845  30.737 -34.360  1.00 26.66      L1   C
ATOM   3409  O   TYR    37     -24.741  30.131 -34.946  1.00 27.88      L1   O
ATOM   3410  N   GLN    38     -23.640  32.040 -34.492  1.00 26.80      L1   N
ATOM   3411  CA  GLN    38     -24.395  32.858 -35.423  1.00 28.14      L1   C
ATOM   3412  CB  GLN    38     -24.986  34.053 -34.674  1.00 29.55      L1   C
ATOM   3413  CG  GLN    38     -25.560  35.128 -35.559  1.00 29.51      L1   C
ATOM   3414  CD  GLN    38     -25.992  36.335 -34.764  1.00 32.32      L1   C
ATOM   3415  OE1 GLN    38     -25.167  37.159 -34.364  1.00 32.45      L1   O
ATOM   3416  NE2 GLN    38     -27.292  36.449 -34.526  1.00 31.43      L1   N
ATOM   3417  C   GLN    38     -23.428  33.339 -36.497  1.00 27.48      L1   C
ATOM   3418  O   GLN    38     -22.313  33.746 -36.181  1.00 27.04      L1   O
ATOM   3419  N   GLN    39     -23.839  33.284 -37.760  1.00 27.49      L1   N
ATOM   3420  CA  GLN    39     -22.977  33.751 -38.838  1.00 28.01      L1   C
ATOM   3421  CB  GLN    39     -22.396  32.569 -39.630  1.00 28.56      L1   C
ATOM   3422  CG  GLN    39     -21.371  33.003 -40.684  1.00 25.91      L1   C
ATOM   3423  CD  GLN    39     -20.727  31.842 -41.412  1.00 26.00      L1   C
ATOM   3424  OE1 GLN    39     -21.345  30.791 -41.602  1.00 25.62      L1   O
ATOM   3425  NE2 GLN    39     -19.476  32.028 -41.832  1.00 22.22      L1   N
ATOM   3426  C   GLN    39     -23.697  34.682 -39.800  1.00 29.88      L1   C
ATOM   3427  O   GLN    39     -24.718  34.318 -40.387  1.00 28.22      L1   O
ATOM   3428  N   LEU    40     -23.143  35.881 -39.957  1.00 32.04      L1   N
ATOM   3429  CA  LEU    40     -23.601  36.838 -40.957  1.00 34.34      L1   C
ATOM   3430  CB  LEU    40     -23.473  38.267 -40.418  1.00 33.92      L1   C
ATOM   3431  CG  LEU    40     -24.221  38.579 -39.117  1.00 37.04      L1   C
ATOM   3432  CD1 LEU    40     -23.977  40.031 -38.729  1.00 38.63      L1   C
ATOM   3433  CD2 LEU    40     -25.711  38.328 -39.297  1.00 37.35      L1   C
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ATOM   3434  C   LEU   40     -22.765  36.686 -42.226  1.00 36.40      L1   C
ATOM   3435  O   LEU   40     -21.658  36.142 -42.194  1.00 35.68      L1   O
ATOM   3436  N   PRO   41     -23.285  37.167 -43.366  1.00 38.85      L1   N
ATOM   3437  CD  PRO   41     -24.597  37.818 -43.534  1.00 38.64      L1   C
ATOM   3438  CA  PRO   41     -22.597  36.981 -44.651  1.00 38.77      L1   C
ATOM   3439  CB  PRO   41     -23.531  37.655 -45.659  1.00 40.02      L1   C
ATOM   3440  CG  PRO   41     -24.884  37.619 -45.000  1.00 38.99      L1   C
ATOM   3441  C   PRO   41     -21.197  37.590 -44.668  1.00 38.74      L1   C
ATOM   3442  O   PRO   41     -20.978  38.690 -44.162  1.00 38.74      L1   O
ATOM   3443  N   GLY   42     -20.248  36.856 -45.236  1.00 38.68      L1   N
ATOM   3444  CA  GLY   42     -18.901  37.375 -45.382  1.00 40.14      L1   C
ATOM   3445  C   GLY   42     -18.135  37.520 -44.080  1.00 40.18      L1   C
ATOM   3446  O   GLY   42     -17.077  38.147 -44.042  1.00 41.17      L1   O
ATOM   3447  N   THR   43     -18.655  36.941 -43.007  1.00 37.47      L1   N
ATOM   3448  CA  THR   43     -17.972  37.040 -41.732  1.00 36.70      L1   C
ATOM   3449  CB  THR   43     -18.660  38.090 -40.841  1.00 38.93      L1   C
ATOM   3450  OG1 THR   43     -17.927  38.239 -39.619  1.00 44.97      L1   O
ATOM   3451  CG2 THR   43     -20.073  37.673 -40.529  1.00 40.28      L1   C
ATOM   3452  C   THR   43     -17.898  35.692 -41.007  1.00 33.58      L1   C
ATOM   3453  O   THR   43     -18.693  34.787 -41.268  1.00 32.26      L1   O
ATOM   3454  N   ALA   44     -16.924  35.556 -40.114  1.00 29.37      L1   N
ATOM   3455  CA  ALA   44     -16.748  34.320 -39.368  1.00 29.17      L1   C
ATOM   3456  CB  ALA   44     -15.469  34.376 -38.542  1.00 24.98      L1   C
ATOM   3457  C   ALA   44     -17.944  34.104 -38.453  1.00 28.88      L1   C
ATOM   3458  O   ALA   44     -18.588  35.057 -38.022  1.00 28.39      L1   O
ATOM   3459  N   PRO   45     -18.249  32.839 -38.139  1.00 28.41      L1   N
ATOM   3460  CD  PRO   45     -17.620  31.619 -38.670  1.00 26.65      L1   C
ATOM   3461  CA  PRO   45     -19.282  32.538 -37.143  1.00 27.06      L1   C
ATOM   3462  CB  PRO   45     -19.254  31.013 -37.036  1.00 25.83      L1   C
ATOM   3463  CG  PRO   45     -18.623  30.552 -38.310  1.00 27.18      L1   C
ATOM   3464  C   PRO   45     -18.922  33.199 -35.818  1.00 28.11      L1   C
ATOM   3465  O   PRO   45     -17.745  33.412 -35.520  1.00 29.04      L1   O
ATOM   3466  N   LYS   46     -19.934  33.527 -35.029  1.00 27.77      L1   N
ATOM   3467  CA  LYS   46     -19.718  34.126 -33.720  1.00 29.30      L1   C
ATOM   3468  CB  LYS   46     -20.324  35.529 -33.693  1.00 30.36      L1   C
ATOM   3469  CG  LYS   46     -20.595  36.080 -32.309  1.00 35.69      L1   C
ATOM   3470  CD  LYS   46     -21.447  37.342 -32.398  1.00 38.46      L1   C
ATOM   3471  CE  LYS   46     -21.611  38.008 -31.040  1.00 41.17      L1   C
ATOM   3472  NZ  LYS   46     -22.445  39.245 -31.131  1.00 43.66      L1   N
ATOM   3473  C   LYS   46     -20.366  33.249 -32.654  1.00 27.70      L1   C
ATOM   3474  O   LYS   46     -21.527  32.869 -32.784  1.00 28.72      L1   O
ATOM   3475  N   LEU   47     -19.611  32.927 -31.609  1.00 25.77      L1   N
ATOM   3476  CA  LEU   47     -20.108  32.072 -30.530  1.00 26.00      L1   C
ATOM   3477  CB  LEU   47     -18.971  31.738 -29.556  1.00 22.43      L1   C
ATOM   3478  CG  LEU   47     -19.368  30.964 -28.294  1.00 24.81      L1   C
ATOM   3479  CD1 LEU   47     -19.762  29.550 -28.680  1.00 20.56      L1   C
ATOM   3480  CD2 LEU   47     -18.207  30.937 -27.298  1.00 22.63      L1   C
ATOM   3481  C   LEU   47     -21.233  32.770 -29.772  1.00 26.08      L1   C
ATOM   3482  O   LEU   47     -21.056  33.895 -29.312  1.00 25.15      L1   O
ATOM   3483  N   LEU   48     -22.376  32.097 -29.642  1.00 26.83      L1   N
ATOM   3484  CA  LEU   48     -23.540  32.643 -28.934  1.00 28.45      L1   C
ATOM   3485  CB  LEU   48     -24.814  32.464 -29.763  1.00 30.33      L1   C
ATOM   3486  CG  LEU   48     -25.021  33.275 -31.042  1.00 35.48      L1   C
ATOM   3487  CD1 LEU   48     -26.383  32.926 -31.613  1.00 35.81      L1   C
ATOM   3488  CD2 LEU   48     -24.938  34.774 -30.756  1.00 34.18      L1   C
ATOM   3489  C   LEU   48     -23.757  31.955 -27.589  1.00 27.72      L1   C
ATOM   3490  O   LEU   48     -24.070  32.598 -26.588  1.00 27.24      L1   O
ATOM   3491  N   ILE   49     -23.608  30.636 -27.590  1.00 27.22      L1   N
ATOM   3492  CA  ILE   49     -23.903  29.810 -26.428  1.00 23.99      L1   C
ATOM   3493  CB  ILE   49     -25.270  29.109 -26.590  1.00 23.11      L1   C
ATOM   3494  CG2 ILE   49     -25.514  28.171 -25.427  1.00 23.24      L1   C
ATOM   3495  CG1 ILE   49     -26.387  30.153 -26.717  1.00 25.09      L1   C
ATOM   3496  CD1 ILE   49     -26.846  30.741 -25.395  1.00 26.07      L1   C
ATOM   3497  C   ILE   49     -22.830  28.738 -26.293  1.00 24.62      L1   C
ATOM   3498  O   ILE   49     -22.472  28.077 -27.272  1.00 25.83      L1   O
ATOM   3499  N   TYR   50     -22.314  28.558 -25.085  1.00 25.53      L1   N
ATOM   3500  CA  TYR   50     -21.466  27.403 -24.811  1.00 26.67      L1   C
ATOM   3501  CB  TYR   50     -20.003  27.833 -24.628  1.00 25.70      L1   C
ATOM   3502  CG  TYR   50     -19.748  28.688 -23.408  1.00 26.62      L1   C
ATOM   3503  CD1 TYR   50     -19.874  30.068 -23.466  1.00 26.79      L1   C
ATOM   3504  CE1 TYR   50     -19.645  30.858 -22.343  1.00 28.90      L1   C
ATOM   3505  CD2 TYR   50     -19.383  28.110 -22.196  1.00 26.72      L1   C
ATOM   3506  CE2 TYR   50     -19.153  28.882 -21.071  1.00 28.12      L1   C
ATOM   3507  CZ  TYR   50     -19.288  30.258 -21.148  1.00 30.76      L1   C
ATOM   3508  OH  TYR   50     -19.085  31.030 -20.026  1.00 29.96      L1   O
ATOM   3509  C   TYR   50     -21.976  26.697 -23.563  1.00 25.84      L1   C
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ATOM   3510  O   TYR    50     -22.784  27.251 -22.821  1.00 24.72      L1   O
ATOM   3511  N   SER    51     -21.518  25.470 -23.343  1.00 26.19      L1   N
ATOM   3512  CA  SER    51     -21.971  24.688 -22.198  1.00 26.90      L1   C
ATOM   3513  CB  SER    51     -21.436  25.284 -20.896  1.00 27.94      L1   C
ATOM   3514  OG  SER    51     -20.133  24.813 -20.626  1.00 31.95      L1   O
ATOM   3515  C   SER    51     -23.494  24.628 -22.129  1.00 24.91      L1   C
ATOM   3516  O   SER    51     -24.080  24.808 -21.060  1.00 22.95      L1   O
ATOM   3517  N   ASN    52     -24.122  24.384 -23.275  1.00 24.45      L1   N
ATOM   3518  CA  ASN    52     -25.571  24.212 -23.351  1.00 25.66      L1   C
ATOM   3519  CB  ASN    52     -26.051  23.237 -22.270  1.00 24.57      L1   C
ATOM   3520  CG  ASN    52     -25.501  21.835 -22.463  1.00 25.41      L1   C
ATOM   3521  OD1 ASN    52     -25.299  21.383 -23.589  1.00 26.77      L1   O
ATOM   3522  ND2 ASN    52     -25.251  21.143 -21.361  1.00 25.99      L1   N
ATOM   3523  C   ASN    52     -26.350  25.520 -23.224  1.00 24.22      L1   C
ATOM   3524  O   ASN    52     -27.273  25.767 -23.999  1.00 24.09      L1   O
ATOM   3525  N   ASN    53     -25.982  26.351 -22.251  1.00 25.54      L1   N
ATOM   3526  CA  ASN    53     -26.821  27.482 -21.875  1.00 27.46      L1   C
ATOM   3527  CB  ASN    53     -27.830  27.038 -20.811  1.00 27.71      L1   C
ATOM   3528  CG  ASN    53     -27.154  26.453 -19.570  1.00 33.27      L1   C
ATOM   3529  OD1 ASN    53     -26.023  26.819 -19.226  1.00 32.11      L1   O
ATOM   3530  ND2 ASN    53     -27.846  25.537 -18.894  1.00 32.47      L1   N
ATOM   3531  C   ASN    53     -26.064  28.712 -21.374  1.00 28.20      L1   C
ATOM   3532  O   ASN    53     -26.664  29.601 -20.766  1.00 26.89      L1   O
ATOM   3533  N   GLN    54     -24.758  28.772 -21.625  1.00 27.94      L1   N
ATOM   3534  CA  GLN    54     -23.949  29.907 -21.182  1.00 26.56      L1   C
ATOM   3535  CB  GLN    54     -22.620  29.410 -20.599  1.00 27.00      L1   C
ATOM   3536  CG  GLN    54     -22.772  28.528 -19.362  1.00 26.24      L1   C
ATOM   3537  CD  GLN    54     -23.496  29.231 -18.222  1.00 29.64      L1   C
ATOM   3538  OE1 GLN    54     -22.973  30.174 -17.630  1.00 28.40      L1   O
ATOM   3539  NE2 GLN    54     -24.708  28.774 -17.914  1.00 26.55      L1   N
ATOM   3540  C   GLN    54     -23.670  30.923 -22.294  1.00 28.39      L1   C
ATOM   3541  O   GLN    54     -23.343  30.557 -23.424  1.00 27.97      L1   O
ATOM   3542  N   ARG    55     -23.797  32.205 -21.971  1.00 27.97      L1   N
ATOM   3543  CA  ARG    55     -23.526  33.247 -22.952  1.00 31.26      L1   C
ATOM   3544  CB  ARG    55     -24.612  34.327 -22.897  1.00 31.77      L1   C
ATOM   3545  CG  ARG    55     -25.921  33.916 -23.551  1.00 35.02      L1   C
ATOM   3546  CD  ARG    55     -27.002  34.966 -23.340  1.00 37.92      L1   C
ATOM   3547  NE  ARG    55     -27.466  34.997 -21.956  1.00 40.09      L1   N
ATOM   3548  CZ  ARG    55     -27.186  35.969 -21.093  1.00 42.88      L1   C
ATOM   3549  NH1 ARG    55     -26.442  37.003 -21.471  1.00 42.75      L1   N
ATOM   3550  NH2 ARG    55     -27.642  35.900 -19.845  1.00 42.31      L1   N
ATOM   3551  C   ARG    55     -22.160  33.892 -22.755  1.00 31.34      L1   C
ATOM   3552  O   ARG    55     -21.785  34.257 -21.647  1.00 30.63      L1   O
ATOM   3553  N   PRO    56     -21.396  34.041 -23.842  1.00 32.93      L1   N
ATOM   3554  CD  PRO    56     -21.569  33.417 -25.162  1.00 30.73      L1   C
ATOM   3555  CA  PRO    56     -20.205  34.891 -23.787  1.00 33.81      L1   C
ATOM   3556  CB  PRO    56     -19.605  34.772 -25.188  1.00 33.09      L1   C
ATOM   3557  CG  PRO    56     -20.196  33.528 -25.754  1.00 33.61      L1   C
ATOM   3558  C   PRO    56     -20.632  36.322 -23.485  1.00 36.31      L1   C
ATOM   3559  O   PRO    56     -21.763  36.721 -23.787  1.00 36.25      L1   O
ATOM   3560  N   SER    57     -19.731  37.084 -22.891  1.00 37.50      L1   N
ATOM   3561  CA  SER    57     -19.946  38.507 -22.683  1.00 41.08      L1   C
ATOM   3562  CB  SER    57     -18.687  39.139 -22.080  1.00 42.30      L1   C
ATOM   3563  OG  SER    57     -18.841  40.537 -21.919  1.00 48.81      L1   O
ATOM   3564  C   SER    57     -20.259  39.151 -24.033  1.00 42.62      L1   C
ATOM   3565  O   SER    57     -19.583  38.883 -25.028  1.00 41.85      L1   O
ATOM   3566  N   GLY    58     -21.290  39.990 -24.068  1.00 43.59      L1   N
ATOM   3567  CA  GLY    58     -21.639  40.665 -25.308  1.00 44.33      L1   C
ATOM   3568  C   GLY    58     -22.635  39.902 -26.160  1.00 44.22      L1   C
ATOM   3569  O   GLY    58     -22.762  40.154 -27.362  1.00 46.95      L1   O
ATOM   3570  N   VAL    59     -23.329  38.949 -25.545  1.00 41.84      L1   N
ATOM   3571  CA  VAL    59     -24.456  38.284 -26.187  1.00 38.40      L1   C
ATOM   3572  CB  VAL    59     -24.213  36.759 -26.312  1.00 37.83      L1   C
ATOM   3573  CG1 VAL    59     -25.456  36.073 -26.854  1.00 35.01      L1   C
ATOM   3574  CG2 VAL    59     -23.019  36.494 -27.223  1.00 34.54      L1   C
ATOM   3575  C   VAL    59     -25.710  38.523 -25.353  1.00 37.89      L1   C
ATOM   3576  O   VAL    59     -25.750  38.195 -24.172  1.00 36.97      L1   O
ATOM   3577  N   PRO    60     -26.753  39.099 -25.967  1.00 38.59      L1   N
ATOM   3578  CD  PRO    60     -26.783  39.481 -27.387  1.00 38.95      L1   C
ATOM   3579  CA  PRO    60     -28.000  39.460 -25.281  1.00 39.12      L1   C
ATOM   3580  CB  PRO    60     -28.852  40.083 -26.384  1.00 38.57      L1   C
ATOM   3581  CG  PRO    60     -27.881  40.495 -27.428  1.00 40.32      L1   C
ATOM   3582  C   PRO    60     -28.694  38.251 -24.657  1.00 39.92      L1   C
ATOM   3583  O   PRO    60     -28.709  37.162 -25.238  1.00 40.29      L1   O
ATOM   3584  N   ASP    61     -29.281  38.449 -23.482  1.00 38.79      L1   N
ATOM   3585  CA  ASP    61     -29.944  37.362 -22.780  1.00 39.81      L1   C
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ATOM   3586  CB  ASP    61     -30.266  37.774 -21.339  1.00 46.00      L1   C
ATOM   3587  CG  ASP    61     -31.094  39.054 -21.258  1.00 50.76      L1   C
ATOM   3588  OD1 ASP    61     -31.389  39.489 -20.123  1.00 53.85      L1   O
ATOM   3589  OD2 ASP    61     -31.446  39.624 -22.317  1.00 52.25      L1   O
ATOM   3590  C   ASP    61     -31.213  36.868 -23.467  1.00 37.81      L1   C
ATOM   3591  O   ASP    61     -31.837  35.917 -23.004  1.00 39.35      L1   O
ATOM   3592  N   ARG    62     -31.601  37.495 -24.571  1.00 36.57      L1   N
ATOM   3593  CA  ARG    62     -32.735  36.985 -25.332  1.00 35.73      L1   C
ATOM   3594  CB  ARG    62     -33.302  38.073 -26.248  1.00 36.98      L1   C
ATOM   3595  CG  ARG    62     -32.312  38.621 -27.243  1.00 40.00      L1   C
ATOM   3596  CD  ARG    62     -32.835  39.889 -27.898  1.00 40.98      L1   C
ATOM   3597  NE  ARG    62     -31.860  40.430 -28.836  1.00 38.44      L1   N
ATOM   3598  CZ  ARG    62     -31.799  40.077 -30.111  1.00 36.96      L1   C
ATOM   3599  NH1 ARG    62     -32.664  39.193 -30.580  1.00 37.84      L1   N
ATOM   3600  NH2 ARG    62     -30.870  40.589 -30.905  1.00 36.03      L1   N
ATOM   3601  C   ARG    62     -32.342  35.752 -26.153  1.00 34.56      L1   C
ATOM   3602  O   ARG    62     -33.199  35.055 -26.687  1.00 32.53      L1   O
ATOM   3603  N   PHE    63     -31.041  35.489 -26.248  1.00 34.16      L1   N
ATOM   3604  CA  PHE    63     -30.561  34.192 -26.738  1.00 33.82      L1   C
ATOM   3605  CB  PHE    63     -29.210  34.345 -27.436  1.00 31.07      L1   C
ATOM   3606  CG  PHE    63     -29.272  35.142 -28.706  1.00 31.60      L1   C
ATOM   3607  CD1 PHE    63     -29.616  34.535 -29.903  1.00 30.71      L1   C
ATOM   3608  CD2 PHE    63     -28.977  36.496 -28.703  1.00 31.31      L1   C
ATOM   3609  CE1 PHE    63     -29.664  35.262 -31.074  1.00 32.32      L1   C
ATOM   3610  CE2 PHE    63     -29.023  37.231 -29.875  1.00 33.14      L1   C
ATOM   3611  CZ  PHE    63     -29.367  36.612 -31.062  1.00 33.35      L1   C
ATOM   3612  C   PHE    63     -30.404  33.236 -25.564  1.00 33.18      L1   C
ATOM   3613  O   PHE    63     -29.770  33.576 -24.568  1.00 34.53      L1   O
ATOM   3614  N   SER    64     -30.982  32.046 -25.676  1.00 31.90      L1   N
ATOM   3615  CA  SER    64     -30.829  31.042 -24.633  1.00 31.99      L1   C
ATOM   3616  CB  SER    64     -31.984  31.139 -23.627  1.00 33.55      L1   C
ATOM   3617  OG  SER    64     -33.196  30.648 -24.176  1.00 34.69      L1   O
ATOM   3618  C   SER    64     -30.777  29.638 -25.226  1.00 30.65      L1   C
ATOM   3619  O   SER    64     -31.400  29.360 -26.247  1.00 32.44      L1   O
ATOM   3620  N   GLY    65     -30.029  28.750 -24.581  1.00 30.08      L1   N
ATOM   3621  CA  GLY    65     -29.917  27.396 -25.086  1.00 28.03      L1   C
ATOM   3622  C   GLY    65     -30.418  26.371 -24.097  1.00 28.41      L1   C
ATOM   3623  O   GLY    65     -30.419  26.609 -22.893  1.00 28.15      L1   O
ATOM   3624  N   SER    66     -30.854  25.223 -24.603  1.00 29.78      L1   N
ATOM   3625  CA  SER    66     -31.205  24.113 -23.730  1.00 29.50      L1   C
ATOM   3626  CB  SER    66     -32.708  24.111 -23.439  1.00 30.04      L1   C
ATOM   3627  OG  SER    66     -33.461  23.989 -24.632  1.00 33.58      L1   O
ATOM   3628  C   SER    66     -30.792  22.782 -24.337  1.00 29.31      L1   C
ATOM   3629  O   SER    66     -30.605  22.661 -25.551  1.00 28.96      L1   O
ATOM   3630  N   LYS    67     -30.636  21.790 -23.472  1.00 29.49      L1   N
ATOM   3631  CA  LYS    67     -30.268  20.448 -23.886  1.00 31.34      L1   C
ATOM   3632  CB  LYS    67     -28.789  20.182 -23.587  1.00 29.79      L1   C
ATOM   3633  CG  LYS    67     -28.422  18.700 -23.598  1.00 30.92      L1   C
ATOM   3634  CD  LYS    67     -26.945  18.480 -23.271  1.00 31.59      L1   C
ATOM   3635  CE  LYS    67     -26.665  17.014 -22.974  1.00 31.18      L1   C
ATOM   3636  NZ  LYS    67     -25.207  16.754 -22.808  1.00 32.99      L1   N
ATOM   3637  C   LYS    67     -31.123  19.451 -23.119  1.00 32.11      L1   C
ATOM   3638  O   LYS    67     -31.355  19.614 -21.921  1.00 33.29      L1   O
ATOM   3639  N   SER    68     -31.591  18.420 -23.808  1.00 32.41      L1   N
ATOM   3640  CA  SER    68     -32.289  17.334 -23.137  1.00 33.97      L1   C
ATOM   3641  CB  SER    68     -33.788  17.624 -23.098  1.00 35.12      L1   C
ATOM   3642  OG  SER    68     -34.481  16.551 -22.492  1.00 39.24      L1   O
ATOM   3643  C   SER    68     -32.038  16.010 -23.851  1.00 32.19      L1   C
ATOM   3644  O   SER    68     -32.356  15.861 -25.027  1.00 31.42      L1   O
ATOM   3645  N   GLY    69     -31.470  15.046 -23.134  1.00 31.82      L1   N
ATOM   3646  CA  GLY    69     -31.165  13.768 -23.750  1.00 30.65      L1   C
ATOM   3647  C   GLY    69     -30.148  13.927 -24.865  1.00 31.46      L1   C
ATOM   3648  O   GLY    69     -29.026  14.364 -24.623  1.00 31.98      L1   O
ATOM   3649  N   THR    70     -30.531  13.572 -26.087  1.00 30.21      L1   N
ATOM   3650  CA  THR    70     -29.627  13.705 -27.221  1.00 29.74      L1   C
ATOM   3651  CB  THR    70     -29.517  12.384 -28.011  1.00 31.03      L1   C
ATOM   3652  OG1 THR    70     -30.813  11.994 -28.472  1.00 32.35      L1   O
ATOM   3653  CG2 THR    70     -28.934  11.269 -27.126  1.00 26.28      L1   C
ATOM   3654  C   THR    70     -30.040  14.820 -28.179  1.00 29.23      L1   C
ATOM   3655  O   THR    70     -29.630  14.837 -29.336  1.00 28.90      L1   O
ATOM   3656  N   SER    71     -30.841  15.759 -27.687  1.00 28.99      L1   N
ATOM   3657  CA  SER    71     -31.244  16.908 -28.486  1.00 27.69      L1   C
ATOM   3658  CB  SER    71     -32.719  16.795 -28.860  1.00 29.27      L1   C
ATOM   3659  OG  SER    71     -32.874  15.835 -29.886  1.00 38.45      L1   O
ATOM   3660  C   SER    71     -31.003  18.208 -27.745  1.00 24.99      L1   C
ATOM   3661  O   SER    71     -30.824  18.208 -26.535  1.00 25.72      L1   O
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ATOM   3662  N   ALA   72     -30.995  19.315 -28.480  1.00 23.94      L1   N
ATOM   3663  CA  ALA   72     -30.769  20.626 -27.884  1.00 26.16      L1   C
ATOM   3664  CB  ALA   72     -29.272  20.976 -27.903  1.00 22.79      L1   C
ATOM   3665  C   ALA   72     -31.555  21.669 -28.654  1.00 26.58      L1   C
ATOM   3666  O   ALA   72     -32.062  21.396 -29.742  1.00 26.75      L1   O
ATOM   3667  N   SER   73     -31.645  22.872 -28.102  1.00 28.14      L1   N
ATOM   3668  CA  SER   73     -32.438  23.910 -28.745  1.00 29.91      L1   C
ATOM   3669  CB  SER   73     -33.900  23.788 -28.305  1.00 30.18      L1   C
ATOM   3670  OG  SER   73     -34.699  24.715 -29.010  1.00 37.35      L1   O
ATOM   3671  C   SER   73     -31.926  25.313 -28.453  1.00 28.74      L1   C
ATOM   3672  O   SER   73     -31.501  25.613 -27.337  1.00 30.53      L1   O
ATOM   3673  N   LEU   74     -31.955  26.161 -29.472  1.00 29.11      L1   N
ATOM   3674  CA  LEU   74     -31.628  27.574 -29.321  1.00 31.29      L1   C
ATOM   3675  CB  LEU   74     -30.694  28.029 -30.449  1.00 28.58      L1   C
ATOM   3676  CG  LEU   74     -30.226  29.483 -30.412  1.00 29.48      L1   C
ATOM   3677  CD1 LEU   74     -29.347  29.689 -29.201  1.00 29.08      L1   C
ATOM   3678  CD2 LEU   74     -29.464  29.827 -31.694  1.00 28.84      L1   C
ATOM   3679  C   LEU   74     -32.931  28.366 -29.384  1.00 32.05      L1   C
ATOM   3680  O   LEU   74     -33.707  28.221 -30.327  1.00 31.82      L1   O
ATOM   3681  N   ALA   75     -33.176  29.194 -28.376  1.00 31.88      L1   N
ATOM   3682  CA  ALA   75     -34.368  30.028 -28.374  1.00 32.47      L1   C
ATOM   3683  CB  ALA   75     -35.148  29.833 -27.077  1.00 32.36      L1   C
ATOM   3684  C   ALA   75     -33.952  31.479 -28.520  1.00 32.90      L1   C
ATOM   3685  O   ALA   75     -33.072  31.955 -27.803  1.00 33.92      L1   O
ATOM   3686  N   ILE   76     -34.575  32.175 -29.462  1.00 33.40      L1   N
ATOM   3687  CA  ILE   76     -34.331  33.597 -29.635  1.00 34.46      L1   C
ATOM   3688  CB  ILE   76     -33.824  33.906 -31.058  1.00 34.25      L1   C
ATOM   3689  CG2 ILE   76     -33.403  35.370 -31.155  1.00 32.73      L1   C
ATOM   3690  CG1 ILE   76     -32.626  33.014 -31.393  1.00 35.86      L1   C
ATOM   3691  CD1 ILE   76     -32.170  33.122 -32.847  1.00 35.68      L1   C
ATOM   3692  C   ILE   76     -35.648  34.331 -29.410  1.00 36.20      L1   C
ATOM   3693  O   ILE   76     -36.586  34.210 -30.204  1.00 35.91      L1   O
ATOM   3694  N   SER   77     -35.722  35.082 -28.319  1.00 36.94      L1   N
ATOM   3695  CA  SER   77     -36.907  35.878 -28.038  1.00 38.93      L1   C
ATOM   3696  CB  SER   77     -37.273  35.777 -26.555  1.00 39.60      L1   C
ATOM   3697  OG  SER   77     -36.215  36.242 -25.739  1.00 42.81      L1   O
ATOM   3698  C   SER   77     -36.655  37.331 -28.424  1.00 39.07      L1   C
ATOM   3699  O   SER   77     -35.503  37.756 -28.574  1.00 37.94      L1   O
ATOM   3700  N   GLY   78     -37.733  38.089 -28.600  1.00 37.57      L1   N
ATOM   3701  CA  GLY   78     -37.585  39.485 -28.966  1.00 35.79      L1   C
ATOM   3702  C   GLY   78     -36.839  39.619 -30.276  1.00 35.60      L1   C
ATOM   3703  O   GLY   78     -35.946  40.458 -30.423  1.00 33.98      L1   O
ATOM   3704  N   LEU   79     -37.212  38.781 -31.236  1.00 35.78      L1   N
ATOM   3705  CA  LEU   79     -36.506  38.703 -32.506  1.00 35.73      L1   C
ATOM   3706  CB  LEU   79     -37.290  37.812 -33.468  1.00 36.94      L1   C
ATOM   3707  CG  LEU   79     -36.602  37.311 -34.738  1.00 37.13      L1   C
ATOM   3708  CD1 LEU   79     -35.333  36.537 -34.392  1.00 34.89      L1   C
ATOM   3709  CD2 LEU   79     -37.583  36.423 -35.490  1.00 37.56      L1   C
ATOM   3710  C   LEU   79     -36.301  40.082 -33.124  1.00 36.83      L1   C
ATOM   3711  O   LEU   79     -37.241  40.872 -33.244  1.00 36.62      L1   O
ATOM   3712  N   GLN   80     -35.064  40.362 -33.519  1.00 37.09      L1   N
ATOM   3713  CA  GLN   80     -34.739  41.593 -34.221  1.00 38.15      L1   C
ATOM   3714  CB  GLN   80     -33.738  42.405 -33.403  1.00 42.19      L1   C
ATOM   3715  CG  GLN   80     -34.200  42.669 -31.979  1.00 49.70      L1   C
ATOM   3716  CD  GLN   80     -33.230  43.539 -31.213  1.00 56.13      L1   C
ATOM   3717  OE1 GLN   80     -32.224  43.999 -31.764  1.00 58.59      L1   O
ATOM   3718  NE2 GLN   80     -33.520  43.772 -29.932  1.00 58.28      L1   N
ATOM   3719  C   GLN   80     -34.154  41.270 -35.592  1.00 38.49      L1   C
ATOM   3720  O   GLN   80     -33.627  40.177 -35.811  1.00 36.48      L1   O
ATOM   3721  N   SER   81     -34.243  42.220 -36.516  1.00 36.90      L1   N
ATOM   3722  CA  SER   81     -33.800  41.975 -37.881  1.00 38.24      L1   C
ATOM   3723  CB  SER   81     -34.135  43.181 -38.771  1.00 37.34      L1   C
ATOM   3724  OG  SER   81     -33.438  44.336 -38.346  1.00 41.79      L1   O
ATOM   3725  C   SER   81     -32.298  41.661 -37.959  1.00 38.41      L1   C
ATOM   3726  O   SER   81     -31.857  40.977 -38.876  1.00 39.41      L1   O
ATOM   3727  N   GLU   82     -31.518  42.156 -37.001  1.00 37.61      L1   N
ATOM   3728  CA  GLU   82     -30.085  41.857 -36.964  1.00 37.59      L1   C
ATOM   3729  CB  GLU   82     -29.382  42.649 -35.855  1.00 41.17      L1   C
ATOM   3730  CG  GLU   82     -29.697  44.126 -35.838  1.00 50.54      L1   C
ATOM   3731  CD  GLU   82     -31.072  44.404 -35.270  1.00 53.17      L1   C
ATOM   3732  OE1 GLU   82     -31.236  44.292 -34.036  1.00 57.55      L1   O
ATOM   3733  OE2 GLU   82     -31.986  44.727 -36.057  1.00 56.15      L1   O
ATOM   3734  C   GLU   82     -29.860  40.370 -36.706  1.00 34.12      L1   C
ATOM   3735  O   GLU   82     -28.765  39.862 -36.899  1.00 31.06      L1   O
ATOM   3736  N   ASP   83     -30.898  39.681 -36.250  1.00 31.15      L1   N
ATOM   3737  CA  ASP   83     -30.779  38.265 -35.941  1.00 30.79      L1   C
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ATOM   3738  CB  ASP    83     -31.877  37.843 -34.962  1.00 30.65      L1    C
ATOM   3739  CG  ASP    83     -31.797  38.587 -33.644  1.00 32.56      L1    C
ATOM   3740  OD1 ASP    83     -30.697  39.067 -33.289  1.00 34.97      L1    O
ATOM   3741  OD2 ASP    83     -32.834  38.692 -32.961  1.00 31.83      L1    O
ATOM   3742  C   ASP    83     -30.846  37.395 -37.194  1.00 29.63      L1    C
ATOM   3743  O   ASP    83     -30.649  36.188 -37.113  1.00 28.37      L1    O
ATOM   3744  N   GLU    84     -31.121  38.002 -38.348  1.00 29.00      L1    N
ATOM   3745  CA  GLU    84     -31.189  37.234 -39.588  1.00 30.03      L1    C
ATOM   3746  CB  GLU    84     -31.730  38.088 -40.741  1.00 30.22      L1    C
ATOM   3747  CG  GLU    84     -31.723  37.358 -42.089  1.00 31.01      L1    C
ATOM   3748  CD  GLU    84     -32.799  37.846 -43.050  1.00 35.95      L1    C
ATOM   3749  OE1 GLU    84     -32.515  37.939 -44.265  1.00 37.52      L1    O
ATOM   3750  OE2 GLU    84     -33.930  38.132 -42.598  1.00 36.88      L1    O
ATOM   3751  C   GLU    84     -29.800  36.714 -39.948  1.00 30.69      L1    C
ATOM   3752  O   GLU    84     -28.873  37.496 -40.160  1.00 31.59      L1    O
ATOM   3753  N   ALA    85     -29.663  35.394 -40.021  1.00 29.97      L1    N
ATOM   3754  CA  ALA    85     -28.345  34.780 -40.110  1.00 28.04      L1    C
ATOM   3755  CB  ALA    85     -27.499  35.206 -38.915  1.00 28.83      L1    C
ATOM   3756  C   ALA    85     -28.440  33.265 -40.153  1.00 27.69      L1    C
ATOM   3757  O   ALA    85     -29.522  32.692 -39.988  1.00 24.83      L1    O
ATOM   3758  N   ASP    86     -27.293  32.625 -40.377  1.00 28.83      L1    N
ATOM   3759  CA  ASP    86     -27.171  31.173 -40.263  1.00 27.36      L1    C
ATOM   3760  CB  ASP    86     -26.098  30.653 -41.224  1.00 30.73      L1    C
ATOM   3761  CG  ASP    86     -26.494  30.794 -42.683  1.00 32.29      L1    C
ATOM   3762  OD1 ASP    86     -27.659  30.501 -43.017  1.00 36.16      L1    O
ATOM   3763  OD2 ASP    86     -25.639  31.194 -43.497  1.00 33.33      L1    O
ATOM   3764  C   ASP    86     -26.775  30.813 -38.835  1.00 26.79      L1    C
ATOM   3765  O   ASP    86     -25.899  31.451 -38.245  1.00 26.47      L1    O
ATOM   3766  N   TYR    87     -27.419  29.789 -38.286  1.00 25.78      L1    N
ATOM   3767  CA  TYR    87     -27.113  29.317 -36.946  1.00 26.34      L1    C
ATOM   3768  CB  TYR    87     -28.346  29.450 -36.043  1.00 26.23      L1    C
ATOM   3769  CG  TYR    87     -28.702  30.888 -35.752  1.00 25.63      L1    C
ATOM   3770  CD1 TYR    87     -29.451  31.636 -36.656  1.00 26.80      L1    C
ATOM   3771  CE1 TYR    87     -29.708  32.973 -36.434  1.00 27.24      L1    C
ATOM   3772  CD2 TYR    87     -28.228  31.520 -34.612  1.00 25.13      L1    C
ATOM   3773  CE2 TYR    87     -28.479  32.856 -34.378  1.00 26.81      L1    C
ATOM   3774  CZ  TYR    87     -29.216  33.579 -35.292  1.00 27.91      L1    C
ATOM   3775  OH  TYR    87     -29.448  34.914 -35.069  1.00 28.02      L1    O
ATOM   3776  C   TYR    87     -26.642  27.870 -36.983  1.00 27.87      L1    C
ATOM   3777  O   TYR    87     -27.238  27.031 -37.662  1.00 28.78      L1    O
ATOM   3778  N   TYR    88     -25.568  27.592 -36.247  1.00 26.11      L1    N
ATOM   3779  CA  TYR    88     -24.955  26.271 -36.230  1.00 23.64      L1    C
ATOM   3780  CB  TYR    88     -23.557  26.328 -36.853  1.00 22.55      L1    C
ATOM   3781  CG  TYR    88     -23.532  26.659 -38.331  1.00 22.94      L1    C
ATOM   3782  CD1 TYR    88     -23.269  27.953 -38.768  1.00 23.36      L1    C
ATOM   3783  CE1 TYR    88     -23.236  28.260 -40.115  1.00 22.59      L1    C
ATOM   3784  CD2 TYR    88     -23.763  25.679 -39.286  1.00 22.71      L1    C
ATOM   3785  CE2 TYR    88     -23.732  25.977 -40.645  1.00 22.56      L1    C
ATOM   3786  CZ  TYR    88     -23.467  27.270 -41.051  1.00 23.14      L1    C
ATOM   3787  OH  TYR    88     -23.430  27.581 -42.399  1.00 23.24      L1    O
ATOM   3788  C   TYR    88     -24.835  25.759 -34.803  1.00 24.19      L1    C
ATOM   3789  O   TYR    88     -24.509  26.525 -33.887  1.00 23.05      L1    O
ATOM   3790  N   CYS    89     -25.087  24.466 -34.613  1.00 23.34      L1    N
ATOM   3791  CA  CYS    89     -24.701  23.808 -33.371  1.00 24.76      L1    C
ATOM   3792  C   CYS    89     -23.428  22.986 -33.551  1.00 24.26      L1    C
ATOM   3793  O   CYS    89     -23.127  22.513 -34.644  1.00 24.97      L1    O
ATOM   3794  CB  CYS    89     -25.829  22.909 -32.844  1.00 24.95      L1    C
ATOM   3795  SG  CYS    89     -26.482  21.652 -33.993  1.00 29.02      L1    S
ATOM   3796  N   ALA    90     -22.684  22.824 -32.467  1.00 22.28      L1    N
ATOM   3797  CA  ALA    90     -21.419  22.115 -32.511  1.00 21.93      L1    C
ATOM   3798  CB  ALA    90     -20.279  23.103 -32.663  1.00 21.85      L1    C
ATOM   3799  C   ALA    90     -21.262  21.320 -31.229  1.00 22.39      L1    C
ATOM   3800  O   ALA    90     -21.575  21.813 -30.139  1.00 23.97      L1    O
ATOM   3801  N   VAL    91     -20.790  20.087 -31.365  1.00 21.91      L1    N
ATOM   3802  CA  VAL    91     -20.699  19.158 -30.241  1.00 22.14      L1    C
ATOM   3803  CB  VAL    91     -21.992  18.315 -30.112  1.00 22.24      L1    C
ATOM   3804  CG1 VAL    91     -21.908  17.407 -28.898  1.00 18.74      L1    C
ATOM   3805  CG2 VAL    91     -23.211  19.238 -30.019  1.00 19.37      L1    C
ATOM   3806  C   VAL    91     -19.530  18.209 -30.487  1.00 23.31      L1    C
ATOM   3807  O   VAL    91     -19.298  17.798 -31.619  1.00 24.62      L1    O
ATOM   3808  N   TRP    92     -18.792  17.864 -29.436  1.00 22.18      L1    N
ATOM   3809  CA  TRP    92     -17.749  16.857 -29.566  1.00 21.63      L1    C
ATOM   3810  CB  TRP    92     -16.850  16.862 -28.331  1.00 20.72      L1    C
ATOM   3811  CG  TRP    92     -15.604  16.033 -28.480  1.00 24.87      L1    C
ATOM   3812  CD2 TRP    92     -14.339  16.463 -29.011  1.00 23.79      L1    C
ATOM   3813  CE2 TRP    92     -13.453  15.372 -28.914  1.00 24.92      L1    C
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ATOM   3814  CE3 TRP    92     -13.874  17.663 -29.556  1.00 24.00      L1   C
ATOM   3815  CD1 TRP    92     -15.435  14.735 -28.100  1.00 24.13      L1   C
ATOM   3816  NE1 TRP    92     -14.147  14.331 -28.356  1.00 26.35      L1   N
ATOM   3817  CZ2 TRP    92     -12.125  15.443 -29.339  1.00 25.22      L1   C
ATOM   3818  CZ3 TRP    92     -12.551  17.734 -29.981  1.00 27.22      L1   C
ATOM   3819  CH2 TRP    92     -11.694  16.629 -29.868  1.00 26.53      L1   C
ATOM   3820  C   TRP    92     -18.378  15.470 -29.739  1.00 22.42      L1   C
ATOM   3821  O   TRP    92     -19.333  15.120 -29.053  1.00 21.21      L1   O
ATOM   3822  N   ASP    93     -17.838  14.684 -30.661  1.00 22.63      L1   N
ATOM   3823  CA  ASP    93     -18.303  13.316 -30.847  1.00 22.79      L1   C
ATOM   3824  CB  ASP    93     -18.629  13.054 -32.312  1.00 22.67      L1   C
ATOM   3825  CG  ASP    93     -19.345  11.732 -32.517  1.00 24.52      L1   C
ATOM   3826  OD1 ASP    93     -20.593  11.733 -32.528  1.00 24.55      L1   O
ATOM   3827  OD2 ASP    93     -18.662  10.695 -32.662  1.00 24.78      L1   O
ATOM   3828  C   ASP    93     -17.234  12.338 -30.393  1.00 23.59      L1   C
ATOM   3829  O   ASP    93     -16.085  12.430 -30.815  1.00 21.15      L1   O
ATOM   3830  N   ASP    94     -17.622  11.396 -29.541  1.00 22.22      L1   N
ATOM   3831  CA  ASP    94     -16.672  10.480 -28.931  1.00 23.56      L1   C
ATOM   3832  CB  ASP    94     -17.222  10.010 -27.579  1.00 22.41      L1   C
ATOM   3833  CG  ASP    94     -17.423  11.162 -26.610  1.00 25.03      L1   C
ATOM   3834  OD1 ASP    94     -16.432  11.869 -26.310  1.00 24.18      L1   O
ATOM   3835  OD2 ASP    94     -18.567  11.367 -26.153  1.00 23.82      L1   O
ATOM   3836  C   ASP    94     -16.291   9.279 -29.803  1.00 22.66      L1   C
ATOM   3837  O   ASP    94     -15.337   8.576 -29.498  1.00 23.33      L1   O
ATOM   3838  N   SER    95     -17.027   9.043 -30.885  1.00 23.45      L1   N
ATOM   3839  CA  SER    95     -16.663   7.979 -31.821  1.00 22.75      L1   C
ATOM   3840  CB  SER    95     -17.913   7.348 -32.444  1.00 21.53      L1   C
ATOM   3841  OG  SER    95     -18.715   6.725 -31.450  1.00 19.78      L1   O
ATOM   3842  C   SER    95     -15.762   8.524 -32.918  1.00 24.04      L1   C
ATOM   3843  O   SER    95     -14.806   7.867 -33.329  1.00 24.34      L1   O
ATOM   3844  N   LEU    96     -16.060   9.736 -33.374  1.00 22.90      L1   N
ATOM   3845  CA  LEU    96     -15.206  10.427 -34.328  1.00 23.33      L1   C
ATOM   3846  CB  LEU    96     -16.022  11.480 -35.076  1.00 25.43      L1   C
ATOM   3847  CG  LEU    96     -17.131  10.906 -35.962  1.00 26.90      L1   C
ATOM   3848  CD1 LEU    96     -18.143  11.991 -36.285  1.00 23.29      L1   C
ATOM   3849  CD2 LEU    96     -16.522  10.341 -37.226  1.00 27.63      L1   C
ATOM   3850  C   LEU    96     -14.008  11.093 -33.644  1.00 23.40      L1   C
ATOM   3851  O   LEU    96     -13.029  11.442 -34.300  1.00 22.31      L1   O
ATOM   3852  N   ASN    97     -14.094  11.267 -32.327  1.00 21.76      L1   N
ATOM   3853  CA  ASN    97     -13.032  11.919 -31.564  1.00 23.62      L1   C
ATOM   3854  CB  ASN    97     -11.765  11.064 -31.594  1.00 23.22      L1   C
ATOM   3855  CG  ASN    97     -11.961   9.742 -30.897  1.00 25.94      L1   C
ATOM   3856  OD1 ASN    97     -12.281   9.698 -29.701  1.00 24.63      L1   O
ATOM   3857  ND2 ASN    97     -11.794   8.651 -31.637  1.00 27.24      L1   N
ATOM   3858  C   ASN    97     -12.719  13.326 -32.054  1.00 24.97      L1   C
ATOM   3859  O   ASN    97     -11.554  13.677 -32.290  1.00 24.92      L1   O
ATOM   3860  N   GLY    98     -13.764  14.134 -32.199  1.00 21.90      L1   N
ATOM   3861  CA  GLY    98     -13.575  15.504 -32.632  1.00 23.01      L1   C
ATOM   3862  C   GLY    98     -14.900  16.223 -32.796  1.00 22.94      L1   C
ATOM   3863  O   GLY    98     -15.961  15.660 -32.516  1.00 19.38      L1   O
ATOM   3864  N   TRP    99     -14.835  17.465 -33.258  1.00 21.48      L1   N
ATOM   3865  CA  TRP    99     -16.017  18.309 -33.354  1.00 21.80      L1   C
ATOM   3866  CB  TRP    99     -15.602  19.784 -33.485  1.00 20.41      L1   C
ATOM   3867  CG  TRP    99     -15.097  20.349 -32.201  1.00 21.29      L1   C
ATOM   3868  CD2 TRP    99     -15.887  20.731 -31.070  1.00 20.83      L1   C
ATOM   3869  CE2 TRP    99     -14.993  21.130 -30.052  1.00 21.78      L1   C
ATOM   3870  CE3 TRP    99     -17.264  20.773 -30.819  1.00 21.01      L1   C
ATOM   3871  CD1 TRP    99     -13.792  20.533 -31.838  1.00 20.69      L1   C
ATOM   3872  NE1 TRP    99     -13.721  21.000 -30.548  1.00 18.42      L1   N
ATOM   3873  CZ2 TRP    99     -15.429  21.565 -28.797  1.00 21.72      L1   C
ATOM   3874  CZ3 TRP    99     -17.701  21.207 -29.572  1.00 24.75      L1   C
ATOM   3875  CH2 TRP    99     -16.782  21.597 -28.575  1.00 23.40      L1   C
ATOM   3876  C   TRP    99     -16.896  17.915 -34.530  1.00 21.60      L1   C
ATOM   3877  O   TRP    99     -16.411  17.673 -35.640  1.00 20.77      L1   O
ATOM   3878  N   VAL   100     -18.196  17.843 -34.280  1.00 21.15      L1   N
ATOM   3879  CA  VAL   100     -19.155  17.745 -35.366  1.00 20.99      L1   C
ATOM   3880  CB  VAL   100     -19.959  16.412 -35.299  1.00 21.63      L1   C
ATOM   3881  CG1 VAL   100     -19.013  15.237 -35.493  1.00 18.33      L1   C
ATOM   3882  CG2 VAL   100     -20.685  16.283 -33.965  1.00 20.08      L1   C
ATOM   3883  C   VAL   100     -20.094  18.945 -35.310  1.00 22.73      L1   C
ATOM   3884  O   VAL   100     -20.206  19.604 -34.271  1.00 21.19      L1   O
ATOM   3885  N   PHE   101     -20.731  19.244 -36.439  1.00 23.17      L1   N
ATOM   3886  CA  PHE   101     -21.625  20.393 -36.556  1.00 24.04      L1   C
ATOM   3887  CB  PHE   101     -21.052  21.421 -37.538  1.00 23.68      L1   C
ATOM   3888  CG  PHE   101     -19.847  22.175 -37.015  1.00 25.65      L1   C
ATOM   3889  CD1 PHE   101     -18.558  21.762 -37.330  1.00 25.40      L1   C
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ATOM   3890  CD2 PHE   101     -20.005  23.323 -36.253  1.00 25.22      L1   C
ATOM   3891  CE1 PHE   101     -17.449  22.484 -36.900  1.00 27.16      L1   C
ATOM   3892  CE2 PHE   101     -18.899  24.053 -35.818  1.00 26.53      L1   C
ATOM   3893  CZ  PHE   101     -17.621  23.632 -36.144  1.00 25.47      L1   C
ATOM   3894  C   PHE   101     -22.995  19.944 -37.060  1.00 24.46      L1   C
ATOM   3895  O   PHE   101     -23.134  18.856 -37.620  1.00 25.98      L1   O
ATOM   3896  N   GLY   102     -24.006  20.782 -36.856  1.00 24.12      L1   N
ATOM   3897  CA  GLY   102     -25.261  20.601 -37.560  1.00 23.71      L1   C
ATOM   3898  C   GLY   102     -25.108  21.230 -38.930  1.00 24.83      L1   C
ATOM   3899  O   GLY   102     -24.139  21.951 -39.169  1.00 25.59      L1   O
ATOM   3900  N   GLY   103     -26.049  20.974 -39.831  1.00 24.86      L1   N
ATOM   3901  CA  GLY   103     -25.923  21.487 -41.188  1.00 23.32      L1   C
ATOM   3902  C   GLY   103     -26.218  22.973 -41.301  1.00 23.92      L1   C
ATOM   3903  O   GLY   103     -26.063  23.565 -42.365  1.00 23.16      L1   O
ATOM   3904  N   GLY   104     -26.637  23.590 -40.205  1.00 24.09      L1   N
ATOM   3905  CA  GLY   104     -26.940  25.010 -40.247  1.00 25.44      L1   C
ATOM   3906  C   GLY   104     -28.406  25.294 -40.535  1.00 26.46      L1   C
ATOM   3907  O   GLY   104     -29.032  24.613 -41.348  1.00 25.23      L1   O
ATOM   3908  N   THR   105     -28.951  26.296 -39.850  1.00 27.15      L1   N
ATOM   3909  CA  THR   105     -30.313  26.762 -40.080  1.00 27.11      L1   C
ATOM   3910  CB  THR   105     -31.161  26.699 -38.801  1.00 26.94      L1   C
ATOM   3911  OG1 THR   105     -31.235  25.348 -38.335  1.00 25.27      L1   O
ATOM   3912  CG2 THR   105     -32.574  27.229 -39.074  1.00 27.18      L1   C
ATOM   3913  C   THR   105     -30.275  28.220 -40.511  1.00 26.67      L1   C
ATOM   3914  O   THR   105     -29.776  29.072 -39.770  1.00 28.70      L1   O
ATOM   3915  N   LYS   106     -30.811  28.511 -41.693  1.00 27.94      L1   N
ATOM   3916  CA  LYS   106     -30.958  29.895 -42.132  1.00 27.78      L1   C
ATOM   3917  CB  LYS   106     -31.076  29.959 -43.660  1.00 30.73      L1   C
ATOM   3918  CG  LYS   106     -31.292  31.370 -44.224  1.00 34.36      L1   C
ATOM   3919  CD  LYS   106     -31.505  31.327 -45.743  1.00 40.73      L1   C
ATOM   3920  CE  LYS   106     -32.204  32.589 -46.269  1.00 43.20      L1   C
ATOM   3921  NZ  LYS   106     -31.412  33.828 -45.992  1.00 43.79      L1   N
ATOM   3922  C   LYS   106     -32.204  30.506 -41.492  1.00 28.25      L1   C
ATOM   3923  O   LYS   106     -33.324  30.102 -41.790  1.00 27.19      L1   O
ATOM   3924  N   LEU   107     -32.002  31.476 -40.606  1.00 28.39      L1   N
ATOM   3925  CA  LEU   107     -33.115  32.167 -39.965  1.00 29.11      L1   C
ATOM   3926  CB  LEU   107     -32.759  32.529 -38.524  1.00 27.84      L1   C
ATOM   3927  CG  LEU   107     -33.833  33.302 -37.750  1.00 30.76      L1   C
ATOM   3928  CD1 LEU   107     -35.095  32.460 -37.646  1.00 28.82      L1   C
ATOM   3929  CD2 LEU   107     -33.320  33.665 -36.364  1.00 29.24      L1   C
ATOM   3930  C   LEU   107     -33.438  33.440 -40.731  1.00 29.95      L1   C
ATOM   3931  O   LEU   107     -32.583  34.313 -40.881  1.00 30.14      L1   O
ATOM   3932  N   THR   108     -34.668  33.544 -41.222  1.00 29.24      L1   N
ATOM   3933  CA  THR   108     -35.124  34.781 -41.835  1.00 29.21      L1   C
ATOM   3934  CB  THR   108     -35.949  34.519 -43.118  1.00 30.64      L1   C
ATOM   3935  OG1 THR   108     -35.126  33.888 -44.107  1.00 30.87      L1   O
ATOM   3936  CG2 THR   108     -36.482  35.837 -43.686  1.00 30.92      L1   C
ATOM   3937  C   THR   108     -35.993  35.535 -40.840  1.00 29.75      L1   C
ATOM   3938  O   THR   108     -36.920  34.973 -40.257  1.00 29.93      L1   O
ATOM   3939  N   VAL   109     -35.685  36.808 -40.637  1.00 30.82      L1   N
ATOM   3940  CA  VAL   109     -36.549  37.666 -39.837  1.00 31.06      L1   C
ATOM   3941  CB  VAL   109     -35.720  38.675 -39.012  1.00 29.89      L1   C
ATOM   3942  CG1 VAL   109     -36.636  39.619 -38.253  1.00 31.03      L1   C
ATOM   3943  CG2 VAL   109     -34.827  37.922 -38.043  1.00 30.10      L1   C
ATOM   3944  C   VAL   109     -37.469  38.404 -40.803  1.00 30.26      L1   C
ATOM   3945  O   VAL   109     -37.037  39.294 -41.537  1.00 28.33      L1   O
ATOM   3946  N   LEU   110     -38.737  38.007 -40.808  1.00 29.80      L1   N
ATOM   3947  CA  LEU   110     -39.672  38.430 -41.844  1.00 30.88      L1   C
ATOM   3948  CB  LEU   110     -41.047  37.813 -41.571  1.00 29.96      L1   C
ATOM   3949  CG  LEU   110     -41.036  36.279 -41.536  1.00 29.38      L1   C
ATOM   3950  CD1 LEU   110     -42.338  35.739 -40.950  1.00 28.86      L1   C
ATOM   3951  CD2 LEU   110     -40.828  35.757 -42.938  1.00 22.82      L1   C
ATOM   3952  C   LEU   110     -39.779  39.950 -41.934  1.00 30.13      L1   C
ATOM   3953  O   LEU   110     -40.124  40.616 -40.962  1.00 30.33      L1   O
ATOM   3954  N   GLY   111     -39.468  40.486 -43.110  1.00 31.70      L1   N
ATOM   3955  CA  GLY   111     -39.525  41.923 -43.327  1.00 32.20      L1   C
ATOM   3956  C   GLY   111     -40.510  42.285 -44.428  1.00 33.43      L1   C
ATOM   3957  O   GLY   111     -40.689  43.461 -44.768  1.00 35.10      L1   O
ATOM   3958  N   GLN   112     -41.150  41.266 -44.990  1.00 33.16      L1   N
ATOM   3959  CA  GLN   112     -42.217  41.465 -45.964  1.00 36.01      L1   C
ATOM   3960  CB  GLN   112     -41.627  41.718 -47.354  1.00 37.16      L1   C
ATOM   3961  CG  GLN   112     -40.857  40.542 -47.931  1.00 37.31      L1   C
ATOM   3962  CD  GLN   112     -40.276  40.863 -49.291  1.00 38.17      L1   C
ATOM   3963  OE1 GLN   112     -40.967  40.775 -50.306  1.00 40.76      L1   O
ATOM   3964  NE2 GLN   112     -39.004  41.243 -49.320  1.00 35.15      L1   N
ATOM   3965  C   GLN   112     -43.097  40.219 -45.984  1.00 36.50      L1   C
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ATOM   3966  O   GLN   112     -42.783  39.228 -45.333  1.00 35.56      L1    O
ATOM   3967  N   PRO   113     -44.224  40.263 -46.714  1.00 37.98      L1    N
ATOM   3968  CD  PRO   113     -44.796  41.426 -47.415  1.00 38.44      L1    C
ATOM   3969  CA  PRO   113     -45.108  39.091 -46.789  1.00 38.56      L1    C
ATOM   3970  CB  PRO   113     -46.269  39.566 -47.669  1.00 38.32      L1    C
ATOM   3971  CG  PRO   113     -46.248  41.057 -47.550  1.00 38.11      L1    C
ATOM   3972  C   PRO   113     -44.401  37.887 -47.403  1.00 39.28      L1    C
ATOM   3973  O   PRO   113     -43.603  38.037 -48.330  1.00 38.01      L1    O
ATOM   3974  N   LYS   114     -44.698  36.697 -46.891  1.00 39.70      L1    N
ATOM   3975  CA  LYS   114     -44.209  35.472 -47.515  1.00 43.10      L1    C
ATOM   3976  CB  LYS   114     -44.646  34.243 -46.708  1.00 41.99      L1    C
ATOM   3977  CG  LYS   114     -44.031  34.182 -45.310  1.00 44.06      L1    C
ATOM   3978  CD  LYS   114     -44.233  32.820 -44.646  1.00 44.49      L1    C
ATOM   3979  CE  LYS   114     -43.571  32.774 -43.276  1.00 46.38      L1    C
ATOM   3980  NZ  LYS   114     -43.874  31.518 -42.529  1.00 47.56      L1    N
ATOM   3981  C   LYS   114     -44.754  35.387 -48.937  1.00 44.55      L1    C
ATOM   3982  O   LYS   114     -45.889  35.782 -49.192  1.00 45.57      L1    O
ATOM   3983  N   ALA   115     -43.936  34.889 -49.861  1.00 45.01      L1    N
ATOM   3984  CA  ALA   115     -44.316  34.830 -51.267  1.00 45.57      L1    C
ATOM   3985  CB  ALA   115     -43.751  36.038 -52.015  1.00 43.32      L1    C
ATOM   3986  C   ALA   115     -43.831  33.540 -51.920  1.00 47.27      L1    C
ATOM   3987  O   ALA   115     -42.635  33.236 -51.918  1.00 47.27      L1    O
ATOM   3988  N   ALA   116     -44.774  32.789 -52.478  1.00 47.90      L1    N
ATOM   3989  CA  ALA   116     -44.469  31.572 -53.213  1.00 48.80      L1    C
ATOM   3990  CB  ALA   116     -45.758  30.823 -53.533  1.00 49.49      L1    C
ATOM   3991  C   ALA   116     -43.724  31.904 -54.500  1.00 49.45      L1    C
ATOM   3992  O   ALA   116     -43.989  32.922 -55.139  1.00 49.52      L1    O
ATOM   3993  N   PRO   117     -42.779  31.038 -54.892  1.00 50.68      L1    N
ATOM   3994  CD  PRO   117     -42.512  29.768 -54.194  1.00 50.62      L1    C
ATOM   3995  CA  PRO   117     -41.904  31.218 -56.055  1.00 52.06      L1    C
ATOM   3996  CB  PRO   117     -40.870  30.110 -55.897  1.00 52.12      L1    C
ATOM   3997  CG  PRO   117     -41.594  29.043 -55.141  1.00 51.66      L1    C
ATOM   3998  C   PRO   117     -42.639  31.105 -57.385  1.00 53.83      L1    C
ATOM   3999  O   PRO   117     -43.584  30.327 -57.518  1.00 53.40      L1    O
ATOM   4000  N   SER   118     -42.193  31.884 -58.366  1.00 56.36      L1    N
ATOM   4001  CA  SER   118     -42.597  31.679 -59.755  1.00 59.62      L1    C
ATOM   4002  CB  SER   118     -42.568  33.003 -60.526  1.00 60.11      L1    C
ATOM   4003  OG  SER   118     -43.416  33.970 -59.935  1.00 62.95      L1    O
ATOM   4004  C   SER   118     -41.621  30.703 -60.406  1.00 60.93      L1    C
ATOM   4005  O   SER   118     -40.406  30.854 -60.272  1.00 61.04      L1    O
ATOM   4006  N   VAL   119     -42.152  29.708 -61.110  1.00 62.70      L1    N
ATOM   4007  CA  VAL   119     -41.313  28.719 -61.779  1.00 64.16      L1    C
ATOM   4008  CB  VAL   119     -41.591  27.300 -61.236  1.00 63.53      L1    C
ATOM   4009  CG1 VAL   119     -40.704  26.287 -61.945  1.00 63.21      L1    C
ATOM   4010  CG2 VAL   119     -41.344  27.263 -59.737  1.00 64.05      L1    C
ATOM   4011  C   VAL   119     -41.522  28.715 -63.293  1.00 65.49      L1    C
ATOM   4012  O   VAL   119     -42.626  28.471 -63.779  1.00 65.80      L1    O
ATOM   4013  N   THR   120     -40.450  28.987 -64.032  1.00 67.43      L1    N
ATOM   4014  CA  THR   120     -40.470  28.914 -65.490  1.00 68.73      L1    C
ATOM   4015  CB  THR   120     -40.051  30.262 -66.117  1.00 68.82      L1    C
ATOM   4016  OG1 THR   120     -40.923  31.298 -65.648  1.00 68.76      L1    O
ATOM   4017  CG2 THR   120     -40.125  30.192 -67.636  1.00 68.58      L1    C
ATOM   4018  C   THR   120     -39.510  27.820 -65.971  1.00 69.56      L1    C
ATOM   4019  O   THR   120     -38.316  27.856 -65.669  1.00 69.35      L1    O
ATOM   4020  N   LEU   121     -40.036  26.853 -66.720  1.00 70.38      L1    N
ATOM   4021  CA  LEU   121     -39.257  25.683 -67.122  1.00 70.76      L1    C
ATOM   4022  CB  LEU   121     -39.920  24.411 -66.594  1.00 70.00      L1    C
ATOM   4023  CG  LEU   121     -39.202  23.105 -66.926  1.00 69.81      L1    C
ATOM   4024  CD1 LEU   121     -37.857  23.072 -66.219  1.00 69.72      L1    C
ATOM   4025  CD2 LEU   121     -40.061  21.928 -66.496  1.00 70.35      L1    C
ATOM   4026  C   LEU   121     -39.087  25.565 -68.637  1.00 71.13      L1    C
ATOM   4027  O   LEU   121     -40.058  25.372 -69.368  1.00 70.75      L1    O
ATOM   4028  N   PHE   122     -37.846  25.663 -69.101  1.00 71.79      L1    N
ATOM   4029  CA  PHE   122     -37.547  25.537 -70.523  1.00 73.09      L1    C
ATOM   4030  CB  PHE   122     -36.521  26.591 -70.944  1.00 72.54      L1    C
ATOM   4031  CG  PHE   122     -37.013  28.004 -70.821  1.00 72.59      L1    C
ATOM   4032  CD1 PHE   122     -36.678  28.777 -69.722  1.00 72.06      L1    C
ATOM   4033  CD2 PHE   122     -37.803  28.564 -71.813  1.00 72.99      L1    C
ATOM   4034  CE1 PHE   122     -37.121  30.084 -69.613  1.00 73.02      L1    C
ATOM   4035  CE2 PHE   122     -38.250  29.873 -71.711  1.00 72.95      L1    C
ATOM   4036  CZ  PHE   122     -37.908  30.633 -70.610  1.00 72.77      L1    C
ATOM   4037  C   PHE   122     -37.009  24.149 -70.864  1.00 74.17      L1    C
ATOM   4038  O   PHE   122     -36.059  23.669 -70.243  1.00 74.07      L1    O
ATOM   4039  N   PRO   123     -37.618  23.485 -71.861  1.00 74.99      L1    N
ATOM   4040  CD  PRO   123     -38.879  23.887 -72.509  1.00 75.22      L1    C
ATOM   4041  CA  PRO   123     -37.079  22.243 -72.430  1.00 74.86      L1    C
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ATOM   4042  CB  PRO   123     -38.219  21.728 -73.305  1.00 74.82      L1   C
ATOM   4043  CG  PRO   123     -38.970  22.961 -73.693  1.00 75.30      L1   C
ATOM   4044  C   PRO   123     -35.808  22.515 -73.238  1.00 74.68      L1   C
ATOM   4045  O   PRO   123     -35.491  23.666 -73.542  1.00 74.38      L1   O
ATOM   4046  N   PRO   124     -35.061  21.456 -73.591  1.00 75.00      L1   N
ATOM   4047  CD  PRO   124     -35.268  20.052 -73.198  1.00 74.86      L1   C
ATOM   4048  CA  PRO   124     -33.841  21.625 -74.390  1.00 74.74      L1   C
ATOM   4049  CB  PRO   124     -33.309  20.199 -74.545  1.00 74.36      L1   C
ATOM   4050  CG  PRO   124     -33.908  19.446 -73.404  1.00 74.67      L1   C
ATOM   4051  C   PRO   124     -34.141  22.267 -75.742  1.00 74.62      L1   C
ATOM   4052  O   PRO   124     -35.135  21.934 -76.387  1.00 74.35      L1   O
ATOM   4053  N   SER   125     -33.284  23.189 -76.167  1.00 74.96      L1   N
ATOM   4054  CA  SER   125     -33.440  23.813 -77.475  1.00 75.14      L1   C
ATOM   4055  CB  SER   125     -32.533  25.043 -77.591  1.00 73.75      L1   C
ATOM   4056  OG  SER   125     -31.171  24.709 -77.395  1.00 72.15      L1   O
ATOM   4057  C   SER   125     -33.095  22.801 -78.563  1.00 76.50      L1   C
ATOM   4058  O   SER   125     -32.531  21.743 -78.282  1.00 76.63      L1   O
ATOM   4059  N   SER   126     -33.446  23.120 -79.804  1.00 77.77      L1   N
ATOM   4060  CA  SER   126     -33.135  22.240 -80.924  1.00 78.66      L1   C
ATOM   4061  CB  SER   126     -33.941  22.651 -82.160  1.00 79.08      L1   C
ATOM   4062  OG  SER   126     -35.334  22.551 -81.917  1.00 79.83      L1   O
ATOM   4063  C   SER   126     -31.641  22.294 -81.235  1.00 78.82      L1   C
ATOM   4064  O   SER   126     -31.039  21.288 -81.610  1.00 78.71      L1   O
ATOM   4065  N   GLU   127     -31.051  23.474 -81.063  1.00 79.12      L1   N
ATOM   4066  CA  GLU   127     -29.627  23.677 -81.312  1.00 80.10      L1   C
ATOM   4067  CB  GLU   127     -29.247  25.144 -81.071  1.00 80.24      L1   C
ATOM   4068  CG  GLU   127     -29.826  26.127 -82.078  1.00 81.24      L1   C
ATOM   4069  CD  GLU   127     -31.272  26.496 -81.787  1.00 82.17      L1   C
ATOM   4070  OE1 GLU   127     -31.928  25.788 -80.993  1.00 82.13      L1   O
ATOM   4071  OE2 GLU   127     -31.754  27.499 -82.356  1.00 81.88      L1   O
ATOM   4072  C   GLU   127     -28.763  22.786 -80.424  1.00 80.55      L1   C
ATOM   4073  O   GLU   127     -27.606  22.516 -80.742  1.00 80.88      L1   O
ATOM   4074  N   GLU   128     -29.326  22.335 -79.308  1.00 81.34      L1   N
ATOM   4075  CA  GLU   128     -28.570  21.553 -78.339  1.00 82.00      L1   C
ATOM   4076  CB  GLU   128     -28.967  21.953 -76.911  1.00 82.28      L1   C
ATOM   4077  CG  GLU   128     -28.026  21.427 -75.834  1.00 81.82      L1   C
ATOM   4078  CD  GLU   128     -28.481  21.778 -74.430  1.00 81.09      L1   C
ATOM   4079  OE1 GLU   128     -27.643  21.730 -73.505  1.00 79.98      L1   O
ATOM   4080  OE2 GLU   128     -29.674  22.099 -74.251  1.00 81.48      L1   O
ATOM   4081  C   GLU   128     -28.794  20.057 -78.539  1.00 82.27      L1   C
ATOM   4082  O   GLU   128     -27.845  19.273 -78.510  1.00 81.56      L1   O
ATOM   4083  N   LEU   129     -30.047  19.664 -78.746  1.00 82.77      L1   N
ATOM   4084  CA  LEU   129     -30.367  18.262 -78.984  1.00 83.70      L1   C
ATOM   4085  CB  LEU   129     -31.860  18.099 -79.282  1.00 83.20      L1   C
ATOM   4086  CG  LEU   129     -32.808  18.383 -78.116  1.00 83.28      L1   C
ATOM   4087  CD1 LEU   129     -34.253  18.198 -78.557  1.00 82.64      L1   C
ATOM   4088  CD2 LEU   129     -32.476  17.449 -76.965  1.00 83.46      L1   C
ATOM   4089  C   LEU   129     -29.544  17.733 -80.154  1.00 84.66      L1   C
ATOM   4090  O   LEU   129     -29.147  16.567 -80.172  1.00 84.88      L1   O
ATOM   4091  N   GLN   130     -29.286  18.602 -81.127  1.00 85.33      L1   N
ATOM   4092  CA  GLN   130     -28.463  18.242 -82.275  1.00 86.17      L1   C
ATOM   4093  CB  GLN   130     -28.619  19.281 -83.390  1.00 86.49      L1   C
ATOM   4094  CG  GLN   130     -28.015  20.639 -83.063  1.00 86.88      L1   C
ATOM   4095  CD  GLN   130     -28.181  21.640 -84.191  1.00 87.75      L1   C
ATOM   4096  OE1 GLN   130     -27.319  22.496 -84.409  1.00 87.18      L1   O
ATOM   4097  NE2 GLN   130     -29.292  21.540 -84.915  1.00 86.91      L1   N
ATOM   4098  C   GLN   130     -26.997  18.152 -81.863  1.00 86.31      L1   C
ATOM   4099  O   GLN   130     -26.260  17.289 -82.342  1.00 87.49      L1   O
ATOM   4100  N   ALA   131     -26.581  19.046 -80.971  1.00 85.27      L1   N
ATOM   4101  CA  ALA   131     -25.210  19.055 -80.478  1.00 84.10      L1   C
ATOM   4102  CB  ALA   131     -24.918  20.373 -79.770  1.00 83.24      L1   C
ATOM   4103  C   ALA   131     -24.971  17.882 -79.528  1.00 83.51      L1   C
ATOM   4104  O   ALA   131     -23.918  17.792 -78.894  1.00 83.48      L1   O
ATOM   4105  N   ASN   132     -25.959  16.994 -79.433  1.00 82.74      L1   N
ATOM   4106  CA  ASN   132     -25.842  15.767 -78.649  1.00 82.64      L1   C
ATOM   4107  CB  ASN   132     -24.526  15.054 -78.983  1.00 82.71      L1   C
ATOM   4108  CG  ASN   132     -24.503  13.611 -78.508  1.00 82.60      L1   C
ATOM   4109  OD1 ASN   132     -25.549  12.972 -78.367  1.00 81.48      L1   O
ATOM   4110  ND2 ASN   132     -23.304  13.090 -78.261  1.00 81.72      L1   N
ATOM   4111  C   ASN   132     -25.920  16.049 -77.146  1.00 82.67      L1   C
ATOM   4112  O   ASN   132     -25.553  15.209 -76.322  1.00 82.72      L1   O
ATOM   4113  N   LYS   133     -26.400  17.241 -76.801  1.00 82.45      L1   N
ATOM   4114  CA  LYS   133     -26.575  17.639 -75.408  1.00 81.60      L1   C
ATOM   4115  CB  LYS   133     -25.705  18.861 -75.100  1.00 81.98      L1   C
ATOM   4116  CG  LYS   133     -24.278  18.755 -75.616  1.00 82.82      L1   C
ATOM   4117  CD  LYS   133     -23.379  18.012 -74.641  1.00 84.05      L1   C
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ATOM   4118  CE  LYS   133     -22.792  18.960 -73.604  1.00 85.60      L1   C
ATOM   4119  NZ  LYS   133     -21.971  20.039 -74.232  1.00 85.73      L1   N
ATOM   4120  C   LYS   133     -28.044  17.979 -75.156  1.00 81.04      L1   C
ATOM   4121  O   LYS   133     -28.780  18.307 -76.087  1.00 81.66      L1   O
ATOM   4122  N   ALA   134     -28.469  17.900 -73.900  1.00 79.38      L1   N
ATOM   4123  CA  ALA   134     -29.825  18.294 -73.537  1.00 77.97      L1   C
ATOM   4124  CB  ALA   134     -30.769  17.107 -73.687  1.00 77.34      L1   C
ATOM   4125  C   ALA   134     -29.882  18.839 -72.110  1.00 77.09      L1   C
ATOM   4126  O   ALA   134     -29.587  18.126 -71.147  1.00 76.45      L1   O
ATOM   4127  N   THR   135     -30.262  20.107 -71.983  1.00 75.44      L1   N
ATOM   4128  CA  THR   135     -30.332  20.765 -70.682  1.00 73.38      L1   C
ATOM   4129  CB  THR   135     -29.333  21.937 -70.590  1.00 72.52      L1   C
ATOM   4130  OG1 THR   135     -28.001  21.455 -70.806  1.00 71.97      L1   O
ATOM   4131  CG2 THR   135     -29.414  22.596 -69.221  1.00 71.78      L1   C
ATOM   4132  C   THR   135     -31.724  21.320 -70.404  1.00 72.81      L1   C
ATOM   4133  O   THR   135     -32.213  22.186 -71.131  1.00 72.54      L1   O
ATOM   4134  N   LEU   136     -32.358  20.824 -69.346  1.00 71.97      L1   N
ATOM   4135  CA  LEU   136     -33.573  21.446 -68.833  1.00 71.28      L1   C
ATOM   4136  CB  LEU   136     -34.423  20.421 -68.076  1.00 70.86      L1   C
ATOM   4137  CG  LEU   136     -35.265  19.454 -68.911  1.00 70.08      L1   C
ATOM   4138  CD1 LEU   136     -34.370  18.679 -69.858  1.00 70.16      L1   C
ATOM   4139  CD2 LEU   136     -36.016  18.507 -67.992  1.00 69.02      L1   C
ATOM   4140  C   LEU   136     -33.208  22.601 -67.901  1.00 71.09      L1   C
ATOM   4141  O   LEU   136     -32.394  22.441 -66.987  1.00 71.21      L1   O
ATOM   4142  N   VAL   137     -33.808  23.764 -68.141  1.00 69.73      L1   N
ATOM   4143  CA  VAL   137     -33.551  24.943 -67.321  1.00 67.62      L1   C
ATOM   4144  CB  VAL   137     -33.154  26.153 -68.190  1.00 67.33      L1   C
ATOM   4145  CG1 VAL   137     -32.927  27.370 -67.311  1.00 65.83      L1   C
ATOM   4146  CG2 VAL   137     -31.901  25.830 -68.989  1.00 67.16      L1   C
ATOM   4147  C   VAL   137     -34.783  25.317 -66.509  1.00 66.67      L1   C
ATOM   4148  O   VAL   137     -35.820  25.671 -67.067  1.00 66.72      L1   O
ATOM   4149  N   CYS   138     -34.662  25.230 -65.188  1.00 65.71      L1   N
ATOM   4150  CA  CYS   138     -35.747  25.611 -64.290  1.00 63.89      L1   C
ATOM   4151  C   CYS   138     -35.386  26.893 -63.559  1.00 62.65      L1   C
ATOM   4152  O   CYS   138     -34.407  26.939 -62.812  1.00 62.18      L1   O
ATOM   4153  CB  CYS   138     -36.011  24.507 -63.268  1.00 64.16      L1   C
ATOM   4154  SG  CYS   138     -37.540  24.736 -62.308  1.00 64.86      L1   S
ATOM   4155  N   LEU   139     -36.182  27.933 -63.775  1.00 61.05      L1   N
ATOM   4156  CA  LEU   139     -35.925  29.224 -63.156  1.00 59.25      L1   C
ATOM   4157  CB  LEU   139     -35.920  30.313 -64.223  1.00 59.69      L1   C
ATOM   4158  CG  LEU   139     -34.894  30.039 -65.322  1.00 60.35      L1   C
ATOM   4159  CD1 LEU   139     -34.880  31.188 -66.302  1.00 61.08      L1   C
ATOM   4160  CD2 LEU   139     -33.518  29.850 -64.700  1.00 60.90      L1   C
ATOM   4161  C   LEU   139     -36.957  29.540 -62.078  1.00 57.87      L1   C
ATOM   4162  O   LEU   139     -38.167  29.469 -62.317  1.00 57.52      L1   O
ATOM   4163  N   ILE   140     -36.462  29.888 -60.893  1.00 55.44      L1   N
ATOM   4164  CA  ILE   140     -37.306  30.104 -59.723  1.00 52.95      L1   C
ATOM   4165  CB  ILE   140     -36.927  29.123 -58.601  1.00 52.69      L1   C
ATOM   4166  CG2 ILE   140     -38.000  29.115 -57.525  1.00 50.12      L1   C
ATOM   4167  CG1 ILE   140     -36.764  27.717 -59.185  1.00 51.28      L1   C
ATOM   4168  CD1 ILE   140     -35.977  26.778 -58.301  1.00 51.25      L1   C
ATOM   4169  C   ILE   140     -37.097  31.531 -59.230  1.00 52.13      L1   C
ATOM   4170  O   ILE   140     -35.985  31.912 -58.874  1.00 51.51      L1   O
ATOM   4171  N   SER   141     -38.165  32.321 -59.214  1.00 52.05      L1   N
ATOM   4172  CA  SER   141     -38.045  33.739 -58.892  1.00 51.89      L1   C
ATOM   4173  CB  SER   141     -38.136  34.569 -60.176  1.00 52.46      L1   C
ATOM   4174  OG  SER   141     -39.277  34.202 -60.934  1.00 55.32      L1   O
ATOM   4175  C   SER   141     -39.086  34.235 -57.889  1.00 50.72      L1   C
ATOM   4176  O   SER   141     -40.109  33.583 -57.661  1.00 50.55      L1   O
ATOM   4177  N   ASP   142     -38.802  35.387 -57.285  1.00 48.87      L1   N
ATOM   4178  CA  ASP   142     -39.777  36.103 -56.470  1.00 47.69      L1   C
ATOM   4179  CB  ASP   142     -40.938  36.587 -57.342  1.00 48.13      L1   C
ATOM   4180  CG  ASP   142     -40.522  37.671 -58.310  1.00 47.87      L1   C
ATOM   4181  OD1 ASP   142     -40.884  37.580 -59.500  1.00 49.98      L1   O
ATOM   4182  OD2 ASP   142     -39.832  38.615 -57.879  1.00 48.34      L1   O
ATOM   4183  C   ASP   142     -40.339  35.310 -55.298  1.00 46.46      L1   C
ATOM   4184  O   ASP   142     -41.513  35.458 -54.958  1.00 47.09      L1   O
ATOM   4185  N   PHE   143     -39.521  34.467 -54.678  1.00 45.07      L1   N
ATOM   4186  CA  PHE   143     -39.969  33.806 -53.462  1.00 43.57      L1   C
ATOM   4187  CB  PHE   143     -39.638  32.304 -53.483  1.00 45.13      L1   C
ATOM   4188  CG  PHE   143     -38.186  31.989 -53.738  1.00 46.48      L1   C
ATOM   4189  CD1 PHE   143     -37.335  31.673 -52.686  1.00 46.51      L1   C
ATOM   4190  CD2 PHE   143     -37.684  31.963 -55.032  1.00 46.16      L1   C
ATOM   4191  CE1 PHE   143     -36.010  31.334 -52.919  1.00 45.94      L1   C
ATOM   4192  CE2 PHE   143     -36.360  31.626 -55.273  1.00 46.80      L1   C
ATOM   4193  CZ  PHE   143     -35.522  31.310 -54.217  1.00 46.20      L1   C
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ATOM   4194  C   PHE   143     -39.377  34.465 -52.230  1.00 41.63      L1   C
ATOM   4195  O   PHE   143     -38.354  35.150 -52.311  1.00 39.49      L1   O
ATOM   4196  N   TYR   144     -40.050  34.280 -51.098  1.00 39.96      L1   N
ATOM   4197  CA  TYR   144     -39.596  34.830 -49.827  1.00 40.17      L1   C
ATOM   4198  CB  TYR   144     -39.838  36.343 -49.777  1.00 37.41      L1   C
ATOM   4199  CG  TYR   144     -39.404  36.963 -48.468  1.00 36.24      L1   C
ATOM   4200  CD1 TYR   144     -40.278  37.034 -47.386  1.00 33.84      L1   C
ATOM   4201  CE1 TYR   144     -39.873  37.566 -46.176  1.00 32.19      L1   C
ATOM   4202  CD2 TYR   144     -38.111  37.445 -48.300  1.00 34.26      L1   C
ATOM   4203  CE2 TYR   144     -37.698  37.978 -47.095  1.00 32.36      L1   C
ATOM   4204  CZ  TYR   144     -38.582  38.038 -46.038  1.00 31.01      L1   C
ATOM   4205  OH  TYR   144     -38.180  38.588 -44.844  1.00 32.81      L1   O
ATOM   4206  C   TYR   144     -40.340  34.158 -48.680  1.00 40.52      L1   C
ATOM   4207  O   TYR   144     -41.560  34.011 -48.728  1.00 42.86      L1   O
ATOM   4208  N   PRO   145     -39.615  33.740 -47.633  1.00 40.04      L1   N
ATOM   4209  CD  PRO   145     -40.238  33.151 -46.436  1.00 39.62      L1   C
ATOM   4210  CA  PRO   145     -38.156  33.852 -47.500  1.00 41.17      L1   C
ATOM   4211  CB  PRO   145     -37.875  33.348 -46.080  1.00 40.22      L1   C
ATOM   4212  CG  PRO   145     -39.073  32.561 -45.692  1.00 39.21      L1   C
ATOM   4213  C   PRO   145     -37.354  33.086 -48.555  1.00 43.02      L1   C
ATOM   4214  O   PRO   145     -37.912  32.315 -49.340  1.00 42.96      L1   O
ATOM   4215  N   GLY   146     -36.041  33.310 -48.569  1.00 44.40      L1   N
ATOM   4216  CA  GLY   146     -35.200  32.759 -49.618  1.00 46.46      L1   C
ATOM   4217  C   GLY   146     -34.687  31.351 -49.356  1.00 48.24      L1   C
ATOM   4218  O   GLY   146     -33.481  31.137 -49.233  1.00 47.83      L1   O
ATOM   4219  N   ALA   147     -35.603  30.389 -49.279  1.00 49.04      L1   N
ATOM   4220  CA  ALA   147     -35.233  28.992 -49.084  1.00 50.76      L1   C
ATOM   4221  CB  ALA   147     -35.225  28.657 -47.597  1.00 48.27      L1   C
ATOM   4222  C   ALA   147     -36.193  28.063 -49.825  1.00 52.27      L1   C
ATOM   4223  O   ALA   147     -37.394  28.034 -49.544  1.00 54.27      L1   O
ATOM   4224  N   VAL   148     -35.658  27.302 -50.773  1.00 52.98      L1   N
ATOM   4225  CA  VAL   148     -36.448  26.317 -51.504  1.00 53.70      L1   C
ATOM   4226  CB  VAL   148     -36.780  26.809 -52.935  1.00 52.32      L1   C
ATOM   4227  CG1 VAL   148     -37.632  28.061 -52.872  1.00 51.32      L1   C
ATOM   4228  CG2 VAL   148     -35.495  27.084 -53.698  1.00 50.98      L1   C
ATOM   4229  C   VAL   148     -35.704  24.990 -51.615  1.00 54.30      L1   C
ATOM   4230  O   VAL   148     -34.493  24.927 -51.415  1.00 53.75      L1   O
ATOM   4231  N   THR   149     -36.442  23.930 -51.928  1.00 55.67      L1   N
ATOM   4232  CA  THR   149     -35.835  22.680 -52.369  1.00 56.75      L1   C
ATOM   4233  CB  THR   149     -36.112  21.540 -51.373  1.00 56.63      L1   C
ATOM   4234  OG1 THR   149     -37.519  21.462 -51.115  1.00 55.86      L1   O
ATOM   4235  CG2 THR   149     -35.364  21.780 -50.071  1.00 55.91      L1   C
ATOM   4236  C   THR   149     -36.392  22.294 -53.734  1.00 58.18      L1   C
ATOM   4237  O   THR   149     -37.597  22.400 -53.977  1.00 58.23      L1   O
ATOM   4238  N   VAL   150     -35.510  21.849 -54.623  1.00 59.58      L1   N
ATOM   4239  CA  VAL   150     -35.909  21.510 -55.983  1.00 62.22      L1   C
ATOM   4240  CB  VAL   150     -35.024  22.235 -57.015  1.00 62.03      L1   C
ATOM   4241  CG1 VAL   150     -35.498  21.913 -58.422  1.00 62.67      L1   C
ATOM   4242  CG2 VAL   150     -35.063  23.732 -56.768  1.00 62.69      L1   C
ATOM   4243  C   VAL   150     -35.833  20.008 -56.248  1.00 63.79      L1   C
ATOM   4244  O   VAL   150     -34.762  19.401 -56.166  1.00 64.56      L1   O
ATOM   4245  N   ALA   151     -36.978  19.414 -56.566  1.00 64.58      L1   N
ATOM   4246  CA  ALA   151     -37.034  18.014 -56.964  1.00 65.49      L1   C
ATOM   4247  CB  ALA   151     -38.086  17.282 -56.144  1.00 64.19      L1   C
ATOM   4248  C   ALA   151     -37.364  17.913 -58.450  1.00 66.84      L1   C
ATOM   4249  O   ALA   151     -38.276  18.580 -58.939  1.00 67.66      L1   O
ATOM   4250  N   TRP   152     -36.613  17.084 -59.167  1.00 67.84      L1   N
ATOM   4251  CA  TRP   152     -36.882  16.842 -60.579  1.00 69.16      L1   C
ATOM   4252  CB  TRP   152     -35.579  16.851 -61.380  1.00 67.01      L1   C
ATOM   4253  CG  TRP   152     -34.968  18.213 -61.549  1.00 64.07      L1   C
ATOM   4254  CD2 TRP   152     -35.151  19.103 -62.658  1.00 62.91      L1   C
ATOM   4255  CE2 TRP   152     -34.345  20.235 -62.422  1.00 62.02      L1   C
ATOM   4256  CE3 TRP   152     -35.916  19.050 -63.829  1.00 62.20      L1   C
ATOM   4257  CD1 TRP   152     -34.088  18.827 -60.707  1.00 62.61      L1   C
ATOM   4258  NE1 TRP   152     -33.707  20.042 -61.225  1.00 61.78      L1   N
ATOM   4259  CZ2 TRP   152     -34.281  21.304 -63.313  1.00 61.34      L1   C
ATOM   4260  CZ3 TRP   152     -35.850  20.113 -64.714  1.00 61.43      L1   C
ATOM   4261  CH2 TRP   152     -35.038  21.224 -64.451  1.00 61.91      L1   C
ATOM   4262  C   TRP   152     -37.579  15.500 -60.751  1.00 71.64      L1   C
ATOM   4263  O   TRP   152     -37.339  14.564 -59.985  1.00 71.81      L1   O
ATOM   4264  N   LYS   153     -38.440  15.407 -61.759  1.00 73.83      L1   N
ATOM   4265  CA  LYS   153     -39.267  14.221 -61.939  1.00 76.53      L1   C
ATOM   4266  CB  LYS   153     -40.708  14.532 -61.520  1.00 77.51      L1   C
ATOM   4267  CG  LYS   153     -41.453  13.361 -60.900  1.00 78.87      L1   C
ATOM   4268  CD  LYS   153     -41.399  13.407 -59.376  1.00 79.45      L1   C
ATOM   4269  CE  LYS   153     -39.981  13.219 -58.855  1.00 80.16      L1   C
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ATOM   4270  NZ  LYS   153     -39.927  13.194 -57.366  1.00 79.77      L1    N
ATOM   4271  C   LYS   153     -39.243  13.737 -63.389  1.00 77.70      L1    C
ATOM   4272  O   LYS   153     -39.608  14.475 -64.304  1.00 77.96      L1    O
ATOM   4273  N   ALA   154     -38.809  12.495 -63.590  1.00 79.25      L1    N
ATOM   4274  CA  ALA   154     -38.815  11.880 -64.917  1.00 80.39      L1    C
ATOM   4275  CB  ALA   154     -37.575  11.013 -65.098  1.00 79.94      L1    C
ATOM   4276  C   ALA   154     -40.075  11.035 -65.085  1.00 81.09      L1    C
ATOM   4277  O   ALA   154     -40.234  10.008 -64.426  1.00 80.56      L1    O
ATOM   4278  N   ASP   155     -40.962  11.470 -65.976  1.00 82.58      L1    N
ATOM   4279  CA  ASP   155     -42.319  10.933 -66.034  1.00 84.19      L1    C
ATOM   4280  CB  ASP   155     -42.302   9.446 -66.414  1.00 85.20      L1    C
ATOM   4281  CG  ASP   155     -42.034   9.222 -67.893  1.00 86.13      L1    C
ATOM   4282  OD1 ASP   155     -42.635   9.939 -68.723  1.00 85.84      L1    O
ATOM   4283  OD2 ASP   155     -41.225   8.326 -68.225  1.00 86.10      L1    O
ATOM   4284  C   ASP   155     -42.981  11.105 -64.673  1.00 84.53      L1    C
ATOM   4285  O   ASP   155     -43.575  12.144 -64.388  1.00 84.90      L1    O
ATOM   4286  N   SER   156     -42.866  10.081 -63.834  1.00 84.79      L1    N
ATOM   4287  CA  SER   156     -43.383  10.136 -62.472  1.00 84.82      L1    C
ATOM   4288  CB  SER   156     -44.545   9.154 -62.310  1.00 85.15      L1    C
ATOM   4289  OG  SER   156     -45.527   9.358 -63.312  1.00 85.88      L1    O
ATOM   4290  C   SER   156     -42.270   9.777 -61.495  1.00 84.72      L1    C
ATOM   4291  O   SER   156     -42.374  10.029 -60.295  1.00 84.40      L1    O
ATOM   4292  N   SER   157     -41.205   9.182 -62.023  1.00 84.73      L1    N
ATOM   4293  CA  SER   157     -40.101   8.708 -61.198  1.00 84.69      L1    C
ATOM   4294  CB  SER   157     -39.301   7.635 -61.946  1.00 84.54      L1    C
ATOM   4295  OG  SER   157     -40.079   6.469 -62.163  1.00 84.37      L1    O
ATOM   4296  C   SER   157     -39.169   9.843 -60.796  1.00 84.54      L1    C
ATOM   4297  O   SER   157     -38.933  10.776 -61.565  1.00 83.92      L1    O
ATOM   4298  N   PRO   158     -38.631   9.773 -59.571  1.00 84.51      L1    N
ATOM   4299  CD  PRO   158     -39.055   8.832 -58.521  1.00 84.52      L1    C
ATOM   4300  CA  PRO   158     -37.633  10.728 -59.079  1.00 84.62      L1    C
ATOM   4301  CB  PRO   158     -37.393  10.286 -57.635  1.00 84.58      L1    C
ATOM   4302  CG  PRO   158     -38.625   9.522 -57.263  1.00 84.46      L1    C
ATOM   4303  C   PRO   158     -36.352  10.680 -59.909  1.00 84.68      L1    C
ATOM   4304  O   PRO   158     -35.918   9.607 -60.333  1.00 84.90      L1    O
ATOM   4305  N   VAL   159     -35.753  11.844 -60.141  1.00 84.33      L1    N
ATOM   4306  CA  VAL   159     -34.479  11.919 -60.847  1.00 83.83      L1    C
ATOM   4307  CB  VAL   159     -34.463  13.086 -61.860  1.00 84.04      L1    C
ATOM   4308  CG1 VAL   159     -33.084  13.210 -62.492  1.00 83.62      L1    C
ATOM   4309  CG2 VAL   159     -35.516  12.857 -62.931  1.00 83.67      L1    C
ATOM   4310  C   VAL   159     -33.328  12.110 -59.864  1.00 83.32      L1    C
ATOM   4311  O   VAL   159     -33.329  13.042 -59.060  1.00 83.25      L1    O
ATOM   4312  N   LYS   160     -32.345  11.221 -59.937  1.00 82.48      L1    N
ATOM   4313  CA  LYS   160     -31.199  11.284 -59.040  1.00 81.67      L1    C
ATOM   4314  CB  LYS   160     -30.533   9.905 -58.947  1.00 81.53      L1    C
ATOM   4315  CG  LYS   160     -31.408   8.839 -58.305  1.00 81.07      L1    C
ATOM   4316  CD  LYS   160     -31.257   7.491 -58.997  1.00 80.52      L1    C
ATOM   4317  CE  LYS   160     -32.249   6.480 -58.440  1.00 80.19      L1    C
ATOM   4318  NZ  LYS   160     -32.296   5.224 -59.240  1.00 80.25      L1    N
ATOM   4319  C   LYS   160     -30.180  12.328 -59.499  1.00 80.59      L1    C
ATOM   4320  O   LYS   160     -30.155  13.449 -58.990  1.00 80.48      L1    O
ATOM   4321  N   ALA   161     -29.352  11.958 -60.472  1.00 78.88      L1    N
ATOM   4322  CA  ALA   161     -28.194  12.764 -60.839  1.00 76.98      L1    C
ATOM   4323  CB  ALA   161     -27.015  11.855 -61.163  1.00 77.49      L1    C
ATOM   4324  C   ALA   161     -28.471  13.694 -62.014  1.00 75.33      L1    C
ATOM   4325  O   ALA   161     -29.578  13.719 -62.554  1.00 74.70      L1    O
ATOM   4326  N   GLY   162     -27.450  14.455 -62.400  1.00 73.68      L1    N
ATOM   4327  CA  GLY   162     -27.592  15.404 -63.490  1.00 71.48      L1    C
ATOM   4328  C   GLY   162     -28.113  16.746 -63.013  1.00 70.15      L1    C
ATOM   4329  O   GLY   162     -28.263  17.681 -63.802  1.00 69.01      L1    O
ATOM   4330  N   VAL   163     -28.383  16.839 -61.713  1.00 69.08      L1    N
ATOM   4331  CA  VAL   163     -29.013  18.020 -61.132  1.00 67.56      L1    C
ATOM   4332  CB  VAL   163     -29.963  17.627 -59.978  1.00 67.21      L1    C
ATOM   4333  CG1 VAL   163     -30.631  18.868 -59.406  1.00 66.89      L1    C
ATOM   4334  CG2 VAL   163     -31.006  16.642 -60.477  1.00 66.02      L1    C
ATOM   4335  C   VAL   163     -27.986  19.019 -60.601  1.00 66.76      L1    C
ATOM   4336  O   VAL   163     -27.082  18.659 -59.846  1.00 65.41      L1    O
ATOM   4337  N   GLU   164     -28.139  20.277 -61.000  1.00 66.54      L1    N
ATOM   4338  CA  GLU   164     -27.250  21.345 -60.551  1.00 66.37      L1    C
ATOM   4339  CB  GLU   164     -26.269  21.708 -61.667  1.00 67.88      L1    C
ATOM   4340  CG  GLU   164     -24.859  21.983 -61.192  1.00 69.70      L1    C
ATOM   4341  CD  GLU   164     -24.073  20.712 -60.971  1.00 70.76      L1    C
ATOM   4342  OE1 GLU   164     -23.934  20.298 -59.801  1.00 71.18      L1    O
ATOM   4343  OE2 GLU   164     -23.597  20.127 -61.969  1.00 71.13      L1    O
ATOM   4344  C   GLU   164     -28.076  22.577 -60.174  1.00 64.94      L1    C
ATOM   4345  O   GLU   164     -28.643  23.243 -61.041  1.00 64.32      L1    O
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ATOM   4346  N   THR   165     -28.140  22.876 -58.881  1.00 62.91      L1   N
ATOM   4347  CA  THR   165     -28.991  23.957 -58.391  1.00 61.09      L1   C
ATOM   4348  CB  THR   165     -30.086  23.418 -57.441  1.00 60.86      L1   C
ATOM   4349  OG1 THR   165     -30.918  22.485 -58.144  1.00 60.45      L1   O
ATOM   4350  CG2 THR   165     -30.947  24.560 -56.915  1.00 59.22      L1   C
ATOM   4351  C   THR   165     -28.192  25.025 -57.649  1.00 59.97      L1   C
ATOM   4352  O   THR   165     -27.360  24.714 -56.795  1.00 60.22      L1   O
ATOM   4353  N   THR   166     -28.455  26.286 -57.973  1.00 57.86      L1   N
ATOM   4354  CA  THR   166     -27.779  27.393 -57.312  1.00 57.52      L1   C
ATOM   4355  CB  THR   166     -27.989  28.715 -58.071  1.00 57.94      L1   C
ATOM   4356  OG1 THR   166     -29.386  29.037 -58.088  1.00 56.92      L1   O
ATOM   4357  CG2 THR   166     -27.471  28.599 -59.496  1.00 57.35      L1   C
ATOM   4358  C   THR   166     -28.276  27.600 -55.883  1.00 56.25      L1   C
ATOM   4359  O   THR   166     -29.303  27.052 -55.475  1.00 55.75      L1   O
ATOM   4360  N   THR   167     -27.536  28.400 -55.127  1.00 54.65      L1   N
ATOM   4361  CA  THR   167     -28.032  28.910 -53.860  1.00 54.27      L1   C
ATOM   4362  CB  THR   167     -26.877  29.393 -52.963  1.00 54.52      L1   C
ATOM   4363  OG1 THR   167     -26.172  30.451 -53.623  1.00 53.89      L1   O
ATOM   4364  CG2 THR   167     -25.909  28.250 -52.680  1.00 54.44      L1   C
ATOM   4365  C   THR   167     -28.949  30.089 -54.161  1.00 53.66      L1   C
ATOM   4366  O   THR   167     -28.730  30.829 -55.121  1.00 52.20      L1   O
ATOM   4367  N   PRO   168     -29.998  30.273 -53.351  1.00 54.17      L1   N
ATOM   4368  CD  PRO   168     -30.507  29.340 -52.331  1.00 53.81      L1   C
ATOM   4369  CA  PRO   168     -30.894  31.418 -53.544  1.00 53.90      L1   C
ATOM   4370  CB  PRO   168     -31.944  31.238 -52.450  1.00 53.59      L1   C
ATOM   4371  CG  PRO   168     -31.945  29.761 -52.185  1.00 54.66      L1   C
ATOM   4372  C   PRO   168     -30.153  32.748 -53.427  1.00 53.20      L1   C
ATOM   4373  O   PRO   168     -29.358  32.942 -52.511  1.00 54.37      L1   O
ATOM   4374  N   SER   169     -30.413  33.654 -54.363  1.00 52.86      L1   N
ATOM   4375  CA  SER   169     -29.782  34.971 -54.360  1.00 52.56      L1   C
ATOM   4376  CB  SER   169     -28.984  35.169 -55.647  1.00 51.77      L1   C
ATOM   4377  OG  SER   169     -29.775  34.846 -56.779  1.00 53.89      L1   O
ATOM   4378  C   SER   169     -30.821  36.083 -54.224  1.00 52.72      L1   C
ATOM   4379  O   SER   169     -31.943  35.962 -54.716  1.00 51.23      L1   O
ATOM   4380  N   LYS   170     -30.440  37.167 -53.556  1.00 53.95      L1   N
ATOM   4381  CA  LYS   170     -31.375  38.246 -53.266  1.00 55.76      L1   C
ATOM   4382  CB  LYS   170     -30.868  39.080 -52.086  1.00 57.25      L1   C
ATOM   4383  CG  LYS   170     -31.817  40.193 -51.657  1.00 59.84      L1   C
ATOM   4384  CD  LYS   170     -31.307  40.916 -50.417  1.00 60.88      L1   C
ATOM   4385  CE  LYS   170     -31.110  39.953 -49.254  1.00 63.31      L1   C
ATOM   4386  NZ  LYS   170     -32.375  39.253 -48.887  1.00 65.05      L1   N
ATOM   4387  C   LYS   170     -31.590  39.147 -54.478  1.00 55.79      L1   C
ATOM   4388  O   LYS   170     -30.646  39.745 -54.992  1.00 56.34      L1   O
ATOM   4389  N   GLN   171     -32.839  39.240 -54.927  1.00 55.98      L1   N
ATOM   4390  CA  GLN   171     -33.200  40.121 -56.032  1.00 56.08      L1   C
ATOM   4391  CB  GLN   171     -34.559  39.716 -56.610  1.00 54.88      L1   C
ATOM   4392  CG  GLN   171     -34.622  38.299 -57.149  1.00 55.49      L1   C
ATOM   4393  CD  GLN   171     -36.046  37.850 -57.439  1.00 56.91      L1   C
ATOM   4394  OE1 GLN   171     -36.271  36.805 -58.053  1.00 56.50      L1   O
ATOM   4395  NE2 GLN   171     -37.018  38.643 -56.995  1.00 56.59      L1   N
ATOM   4396  C   GLN   171     -33.263  41.575 -55.567  1.00 57.33      L1   C
ATOM   4397  O   GLN   171     -32.982  41.882 -54.407  1.00 58.32      L1   O
ATOM   4398  N   SER   172     -33.637  42.465 -56.481  1.00 57.40      L1   N
ATOM   4399  CA  SER   172     -33.736  43.889 -56.178  1.00 57.00      L1   C
ATOM   4400  CB  SER   172     -33.911  44.682 -57.473  1.00 57.43      L1   C
ATOM   4401  OG  SER   172     -34.948  44.123 -58.263  1.00 58.48      L1   O
ATOM   4402  C   SER   172     -34.900  44.183 -55.233  1.00 56.38      L1   C
ATOM   4403  O   SER   172     -34.776  45.001 -54.322  1.00 57.23      L1   O
ATOM   4404  N   ASN   173     -36.026  43.511 -55.454  1.00 54.81      L1   N
ATOM   4405  CA  ASN   173     -37.207  43.684 -54.613  1.00 52.81      L1   C
ATOM   4406  CB  ASN   173     -38.442  43.191 -55.356  1.00 53.01      L1   C
ATOM   4407  CG  ASN   173     -38.286  41.770 -55.848  1.00 54.06      L1   C
ATOM   4408  OD1 ASN   173     -37.432  41.027 -55.364  1.00 54.19      L1   O
ATOM   4409  ND2 ASN   173     -39.108  41.383 -56.816  1.00 54.46      L1   N
ATOM   4410  C   ASN   173     -37.062  42.919 -53.298  1.00 52.76      L1   C
ATOM   4411  O   ASN   173     -38.020  42.770 -52.540  1.00 51.62      L1   O
ATOM   4412  N   ASN   174     -35.858  42.423 -53.042  1.00 52.25      L1   N
ATOM   4413  CA  ASN   174     -35.560  41.753 -51.788  1.00 50.29      L1   C
ATOM   4414  CB  ASN   174     -35.930  42.661 -50.615  1.00 53.67      L1   C
ATOM   4415  CG  ASN   174     -34.994  43.848 -50.488  1.00 55.99      L1   C
ATOM   4416  OD1 ASN   174     -33.839  43.694 -50.091  1.00 58.37      L1   O
ATOM   4417  ND2 ASN   174     -35.483  45.037 -50.830  1.00 56.42      L1   N
ATOM   4418  C   ASN   174     -36.253  40.402 -51.654  1.00 48.00      L1   C
ATOM   4419  O   ASN   174     -36.163  39.755 -50.611  1.00 45.22      L1   O
ATOM   4420  N   LYS   175     -36.944  39.977 -52.709  1.00 46.20      L1   N
ATOM   4421  CA  LYS   175     -37.315  38.574 -52.844  1.00 45.58      L1   C
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ATOM   4422  CB  LYS   175     -38.486  38.410 -53.819  1.00 44.39      L1   C
ATOM   4423  CG  LYS   175     -39.801  39.024 -53.348  1.00 44.61      L1   C
ATOM   4424  CD  LYS   175     -40.991  38.369 -54.048  1.00 44.52      L1   C
ATOM   4425  CE  LYS   175     -42.325  38.951 -53.593  1.00 44.60      L1   C
ATOM   4426  NZ  LYS   175     -42.567  40.326 -54.117  1.00 43.73      L1   N
ATOM   4427  C   LYS   175     -36.095  37.812 -53.359  1.00 46.51      L1   C
ATOM   4428  O   LYS   175     -35.042  38.404 -53.590  1.00 46.31      L1   O
ATOM   4429  N   TYR   176     -36.229  36.503 -53.535  1.00 47.57      L1   N
ATOM   4430  CA  TYR   176     -35.092  35.680 -53.940  1.00 49.06      L1   C
ATOM   4431  CB  TYR   176     -34.766  34.665 -52.847  1.00 47.73      L1   C
ATOM   4432  CG  TYR   176     -34.098  35.252 -51.631  1.00 48.77      L1   C
ATOM   4433  CD1 TYR   176     -32.771  34.961 -51.345  1.00 49.57      L1   C
ATOM   4434  CE1 TYR   176     -32.160  35.455 -50.210  1.00 51.42      L1   C
ATOM   4435  CD2 TYR   176     -34.799  36.066 -50.743  1.00 48.10      L1   C
ATOM   4436  CE2 TYR   176     -34.193  36.568 -49.600  1.00 48.23      L1   C
ATOM   4437  CZ  TYR   176     -32.871  36.255 -49.339  1.00 50.96      L1   C
ATOM   4438  OH  TYR   176     -32.247  36.721 -48.202  1.00 51.85      L1   O
ATOM   4439  C   TYR   176     -35.296  34.936 -55.260  1.00 50.28      L1   C
ATOM   4440  O   TYR   176     -36.421  34.615 -55.648  1.00 50.45      L1   O
ATOM   4441  N   ALA   177     -34.186  34.658 -55.937  1.00 50.51      L1   N
ATOM   4442  CA  ALA   177     -34.201  33.888 -57.170  1.00 52.09      L1   C
ATOM   4443  CB  ALA   177     -33.844  34.784 -58.352  1.00 50.29      L1   C
ATOM   4444  C   ALA   177     -33.212  32.731 -57.074  1.00 53.43      L1   C
ATOM   4445  O   ALA   177     -32.246  32.784 -56.307  1.00 52.69      L1   O
ATOM   4446  N   ALA   178     -33.459  31.689 -57.861  1.00 54.62      L1   N
ATOM   4447  CA  ALA   178     -32.601  30.513 -57.875  1.00 55.83      L1   C
ATOM   4448  CB  ALA   178     -33.021  29.550 -56.773  1.00 55.75      L1   C
ATOM   4449  C   ALA   178     -32.690  29.825 -59.230  1.00 56.94      L1   C
ATOM   4450  O   ALA   178     -33.667  29.995 -59.958  1.00 56.28      L1   O
ATOM   4451  N   SER   179     -31.662  29.052 -59.563  1.00 58.47      L1   N
ATOM   4452  CA  SER   179     -31.650  28.281 -60.800  1.00 59.49      L1   C
ATOM   4453  CB  SER   179     -30.569  28.812 -61.742  1.00 58.95      L1   C
ATOM   4454  OG  SER   179     -30.847  30.142 -62.130  1.00 60.29      L1   O
ATOM   4455  C   SER   179     -31.395  26.805 -60.520  1.00 60.01      L1   C
ATOM   4456  O   SER   179     -30.626  26.455 -59.625  1.00 60.02      L1   O
ATOM   4457  N   SER   180     -32.050  25.943 -61.290  1.00 60.42      L1   N
ATOM   4458  CA  SER   180     -31.746  24.520 -61.264  1.00 61.35      L1   C
ATOM   4459  CB  SER   180     -32.836  23.755 -60.509  1.00 60.80      L1   C
ATOM   4460  OG  SER   180     -32.458  22.404 -60.306  1.00 59.95      L1   O
ATOM   4461  C   SER   180     -31.637  23.994 -62.690  1.00 62.30      L1   C
ATOM   4462  O   SER   180     -32.556  24.150 -63.493  1.00 61.67      L1   O
ATOM   4463  N   TYR   181     -30.505  23.376 -63.003  1.00 63.90      L1   N
ATOM   4464  CA  TYR   181     -30.283  22.822 -64.332  1.00 64.83      L1   C
ATOM   4465  CB  TYR   181     -28.971  23.354 -64.904  1.00 63.82      L1   C
ATOM   4466  CG  TYR   181     -28.972  24.844 -65.154  1.00 64.75      L1   C
ATOM   4467  CD1 TYR   181     -28.789  25.744 -64.112  1.00 64.15      L1   C
ATOM   4468  CE1 TYR   181     -28.756  27.107 -64.346  1.00 65.10      L1   C
ATOM   4469  CD2 TYR   181     -29.127  25.350 -66.439  1.00 63.88      L1   C
ATOM   4470  CE2 TYR   181     -29.096  26.708 -66.682  1.00 63.92      L1   C
ATOM   4471  CZ  TYR   181     -28.908  27.583 -65.634  1.00 65.26      L1   C
ATOM   4472  OH  TYR   181     -28.850  28.934 -65.881  1.00 65.71      L1   O
ATOM   4473  C   TYR   181     -30.244  21.302 -64.290  1.00 66.15      L1   C
ATOM   4474  O   TYR   181     -29.520  20.712 -63.486  1.00 66.57      L1   O
ATOM   4475  N   LEU   182     -31.030  20.668 -65.152  1.00 67.55      L1   N
ATOM   4476  CA  LEU   182     -30.982  19.217 -65.284  1.00 69.82      L1   C
ATOM   4477  CB  LEU   182     -32.388  18.618 -65.181  1.00 69.84      L1   C
ATOM   4478  CG  LEU   182     -32.470  17.116 -65.479  1.00 70.75      L1   C
ATOM   4479  CD1 LEU   182     -31.428  16.367 -64.653  1.00 70.11      L1   C
ATOM   4480  CD2 LEU   182     -33.870  16.602 -65.179  1.00 70.49      L1   C
ATOM   4481  C   LEU   182     -30.351  18.814 -66.613  1.00 70.96      L1   C
ATOM   4482  O   LEU   182     -30.884  19.117 -67.683  1.00 71.15      L1   O
ATOM   4483  N   SER   183     -29.214  18.131 -66.536  1.00 71.50      L1   N
ATOM   4484  CA  SER   183     -28.553  17.619 -67.728  1.00 71.86      L1   C
ATOM   4485  CB  SER   183     -27.033  17.734 -67.584  1.00 71.20      L1   C
ATOM   4486  OG  SER   183     -26.626  19.092 -67.550  1.00 70.56      L1   O
ATOM   4487  C   SER   183     -28.937  16.166 -67.964  1.00 72.44      L1   C
ATOM   4488  O   SER   183     -28.869  15.339 -67.057  1.00 72.17      L1   O
ATOM   4489  N   LEU   184     -29.353  15.865 -69.188  1.00 73.34      L1   N
ATOM   4490  CA  LEU   184     -29.605  14.489 -69.591  1.00 74.57      L1   C
ATOM   4491  CB  LEU   184     -31.074  14.125 -69.346  1.00 74.23      L1   C
ATOM   4492  CG  LEU   184     -32.149  15.157 -69.697  1.00 73.95      L1   C
ATOM   4493  CD1 LEU   184     -32.186  15.392 -71.194  1.00 74.22      L1   C
ATOM   4494  CD2 LEU   184     -33.496  14.657 -69.211  1.00 73.72      L1   C
ATOM   4495  C   LEU   184     -29.243  14.299 -71.060  1.00 75.82      L1   C
ATOM   4496  O   LEU   184     -29.060  15.273 -71.791  1.00 75.56      L1   O
ATOM   4497  N   THR   185     -29.124  13.047 -71.489  1.00 77.26      L1   N
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ATOM   4498  CA  THR   185     -28.787  12.766 -72.878  1.00 78.90      L1    C
ATOM   4499  CB  THR   185     -28.252  11.321 -73.056  1.00 79.12      L1    C
ATOM   4500  OG1 THR   185     -29.259  10.378 -72.664  1.00 79.12      L1    O
ATOM   4501  CG2 THR   185     -27.001  11.109 -72.210  1.00 78.20      L1    C
ATOM   4502  C   THR   185     -30.023  12.955 -73.748  1.00 79.76      L1    C
ATOM   4503  O   THR   185     -31.148  12.692 -73.313  1.00 79.50      L1    O
ATOM   4504  N   PRO   186     -29.828  13.420 -74.992  1.00 80.66      L1    N
ATOM   4505  CD  PRO   186     -28.522  13.709 -75.608  1.00 80.61      L1    C
ATOM   4506  CA  PRO   186     -30.939  13.701 -75.908  1.00 81.88      L1    C
ATOM   4507  CB  PRO   186     -30.240  14.073 -77.215  1.00 81.41      L1    C
ATOM   4508  CG  PRO   186     -28.889  14.557 -76.788  1.00 80.92      L1    C
ATOM   4509  C   PRO   186     -31.843  12.485 -76.068  1.00 83.38      L1    C
ATOM   4510  O   PRO   186     -33.050  12.612 -76.280  1.00 83.33      L1    O
ATOM   4511  N   GLU   187     -31.242  11.305 -75.955  1.00 84.89      L1    N
ATOM   4512  CA  GLU   187     -31.967  10.050 -76.094  1.00 86.26      L1    C
ATOM   4513  CB  GLU   187     -30.988   8.872 -76.050  1.00 86.44      L1    C
ATOM   4514  CG  GLU   187     -29.896   8.924 -77.117  1.00 87.62      L1    C
ATOM   4515  CD  GLU   187     -28.843   9.992 -76.843  1.00 88.12      L1    C
ATOM   4516  OE1 GLU   187     -28.057   9.823 -75.886  1.00 88.36      L1    O
ATOM   4517  OE2 GLU   187     -28.800  10.996 -77.587  1.00 87.80      L1    O
ATOM   4518  C   GLU   187     -33.007   9.900 -74.987  1.00 86.75      L1    C
ATOM   4519  O   GLU   187     -34.201   9.762 -75.260  1.00 87.11      L1    O
ATOM   4520  N   GLN   188     -32.551   9.938 -73.738  1.00 86.85      L1    N
ATOM   4521  CA  GLN   188     -33.449   9.776 -72.601  1.00 86.86      L1    C
ATOM   4522  CB  GLN   188     -32.645   9.606 -71.310  1.00 86.25      L1    C
ATOM   4523  CG  GLN   188     -31.628  10.699 -71.052  1.00 86.47      L1    C
ATOM   4524  CD  GLN   188     -30.730  10.378 -69.873  1.00 86.63      L1    C
ATOM   4525  OE1 GLN   188     -29.527  10.641 -69.901  1.00 86.47      L1    O
ATOM   4526  NE2 GLN   188     -31.312   9.802 -68.828  1.00 86.42      L1    N
ATOM   4527  C   GLN   188     -34.415  10.951 -72.466  1.00 87.03      L1    C
ATOM   4528  O   GLN   188     -35.455  10.836 -71.817  1.00 86.87      L1    O
ATOM   4529  N   TRP   189     -34.072  12.078 -73.085  1.00 86.98      L1    N
ATOM   4530  CA  TRP   189     -34.980  13.220 -73.142  1.00 87.11      L1    C
ATOM   4531  CB  TRP   189     -34.300  14.398 -73.847  1.00 87.05      L1    C
ATOM   4532  CG  TRP   189     -35.253  15.455 -74.337  1.00 87.49      L1    C
ATOM   4533  CD2 TRP   189     -36.222  16.172 -73.558  1.00 87.50      L1    C
ATOM   4534  CE2 TRP   189     -36.886  17.056 -74.430  1.00 87.06      L1    C
ATOM   4535  CE3 TRP   189     -36.590  16.151 -72.208  1.00 87.12      L1    C
ATOM   4536  CD1 TRP   189     -35.371  15.923 -75.615  1.00 87.14      L1    C
ATOM   4537  NE1 TRP   189     -36.351  16.885 -75.679  1.00 87.03      L1    N
ATOM   4538  CZ2 TRP   189     -37.900  17.911 -73.998  1.00 87.27      L1    C
ATOM   4539  CZ3 TRP   189     -37.597  17.000 -71.781  1.00 87.07      L1    C
ATOM   4540  CH2 TRP   189     -38.239  17.868 -72.673  1.00 87.37      L1    C
ATOM   4541  C   TRP   189     -36.256  12.839 -73.886  1.00 87.39      L1    C
ATOM   4542  O   TRP   189     -37.366  13.094 -73.416  1.00 86.90      L1    O
ATOM   4543  N   LYS   190     -36.086  12.216 -75.047  1.00 88.13      L1    N
ATOM   4544  CA  LYS   190     -37.209  11.865 -75.910  1.00 88.58      L1    C
ATOM   4545  CB  LYS   190     -36.711  11.657 -77.343  1.00 88.28      L1    C
ATOM   4546  CG  LYS   190     -35.788  12.759 -77.847  1.00 87.78      L1    C
ATOM   4547  CD  LYS   190     -36.571  13.950 -78.371  1.00 87.40      L1    C
ATOM   4548  CE  LYS   190     -37.307  13.602 -79.657  1.00 86.94      L1    C
ATOM   4549  NZ  LYS   190     -38.075  14.758 -80.198  1.00 86.22      L1    N
ATOM   4550  C   LYS   190     -37.917  10.600 -75.423  1.00 88.94      L1    C
ATOM   4551  O   LYS   190     -39.079  10.361 -75.756  1.00 88.78      L1    O
ATOM   4552  N   SER   191     -37.212   9.797 -74.631  1.00 89.21      L1    N
ATOM   4553  CA  SER   191     -37.719   8.494 -74.213  1.00 89.73      L1    C
ATOM   4554  CB  SER   191     -36.556   7.586 -73.801  1.00 90.11      L1    C
ATOM   4555  OG  SER   191     -35.907   8.073 -72.639  1.00 90.61      L1    O
ATOM   4556  C   SER   191     -38.728   8.582 -73.068  1.00 89.98      L1    C
ATOM   4557  O   SER   191     -39.285   7.567 -72.645  1.00 89.77      L1    O
ATOM   4558  N   HIS   192     -38.957   9.790 -72.561  1.00 90.04      L1    N
ATOM   4559  CA  HIS   192     -39.911   9.986 -71.474  1.00 89.79      L1    C
ATOM   4560  CB  HIS   192     -39.214  10.625 -70.268  1.00 89.58      L1    C
ATOM   4561  CG  HIS   192     -38.255   9.712 -69.569  1.00 89.63      L1    C
ATOM   4562  CD2 HIS   192     -36.938   9.472 -69.776  1.00 89.30      L1    C
ATOM   4563  ND1 HIS   192     -38.625   8.915 -68.506  1.00 89.88      L1    N
ATOM   4564  CE1 HIS   192     -37.578   8.225 -68.089  1.00 89.37      L1    C
ATOM   4565  NE2 HIS   192     -36.541   8.545 -68.843  1.00 89.09      L1    N
ATOM   4566  C   HIS   192     -41.093  10.850 -71.906  1.00 89.78      L1    C
ATOM   4567  O   HIS   192     -40.961  11.703 -72.785  1.00 89.72      L1    O
ATOM   4568  N   ARG   193     -42.246  10.620 -71.282  1.00 89.66      L1    N
ATOM   4569  CA  ARG   193     -43.456  11.380 -71.583  1.00 89.47      L1    C
ATOM   4570  CB  ARG   193     -44.650  10.806 -70.812  1.00 90.32      L1    C
ATOM   4571  CG  ARG   193     -45.282   9.593 -71.468  1.00 91.88      L1    C
ATOM   4572  CD  ARG   193     -45.834   9.961 -72.836  1.00 93.71      L1    C
ATOM   4573  NE  ARG   193     -46.143   8.787 -73.648  1.00 94.98      L1    N
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ATOM	4574	CZ	ARG	193	-46.579	8.844	-74.904	1.00	95.50	L1	C
ATOM	4575	NH1	ARG	193	-46.834	7.725	-75.570	1.00	95.39	L1	N
ATOM	4576	NH2	ARG	193	-46.761	10.020	-75.492	1.00	95.47	L1	N
ATOM	4577	C	ARG	193	-43.300	12.862	-71.251	1.00	88.54	L1	C
ATOM	4578	O	ARG	193	-43.756	13.724	-72.004	1.00	88.43	L1	O
ATOM	4579	N	SER	194	-42.658	13.150	-70.121	1.00	87.52	L1	N
ATOM	4580	CA	SER	194	-42.402	14.528	-69.707	1.00	85.86	L1	C
ATOM	4581	CB	SER	194	-43.723	15.262	-69.446	1.00	85.32	L1	C
ATOM	4582	OG	SER	194	-44.394	14.726	-68.318	1.00	83.93	L1	O
ATOM	4583	C	SER	194	-41.537	14.584	-68.450	1.00	84.95	L1	C
ATOM	4584	O	SER	194	-41.534	13.653	-67.643	1.00	84.18	L1	O
ATOM	4585	N	TYR	195	-40.803	15.684	-68.298	1.00	83.96	L1	N
ATOM	4586	CA	TYR	195	-40.034	15.947	-67.085	1.00	82.58	L1	C
ATOM	4587	CB	TYR	195	-38.584	16.284	-67.439	1.00	82.92	L1	C
ATOM	4588	CG	TYR	195	-37.729	15.078	-67.748	1.00	83.66	L1	C
ATOM	4589	CD1	TYR	195	-36.938	14.495	-66.765	1.00	83.87	L1	C
ATOM	4590	CE1	TYR	195	-36.145	13.398	-67.042	1.00	84.28	L1	C
ATOM	4591	CD2	TYR	195	-37.703	14.526	-69.023	1.00	83.62	L1	C
ATOM	4592	CE2	TYR	195	-36.911	13.428	-69.311	1.00	83.74	L1	C
ATOM	4593	CZ	TYR	195	-36.134	12.869	-68.317	1.00	84.20	L1	C
ATOM	4594	OH	TYR	195	-35.332	11.786	-68.600	1.00	84.08	L1	O
ATOM	4595	C	TYR	195	-40.646	17.101	-66.300	1.00	81.49	L1	C
ATOM	4596	O	TYR	195	-41.169	18.050	-66.886	1.00	81.16	L1	O
ATOM	4597	N	SER	196	-40.576	17.016	-64.973	1.00	80.07	L1	N
ATOM	4598	CA	SER	196	-41.152	18.040	-64.106	1.00	78.68	L1	C
ATOM	4599	CB	SER	196	-42.303	17.454	-63.284	1.00	79.05	L1	C
ATOM	4600	OG	SER	196	-43.396	17.099	-64.113	1.00	80.30	L1	O
ATOM	4601	C	SER	196	-40.127	18.660	-63.159	1.00	77.25	L1	C
ATOM	4602	O	SER	196	-39.337	17.952	-62.530	1.00	76.71	L1	O
ATOM	4603	N	CYS	197	-40.153	19.987	-63.063	1.00	75.59	L1	N
ATOM	4604	CA	CYS	197	-39.390	20.701	-62.046	1.00	73.09	L1	C
ATOM	4605	C	CYS	197	-40.296	21.060	-60.876	1.00	72.59	L1	C
ATOM	4606	O	CYS	197	-41.221	21.859	-61.020	1.00	72.65	L1	O
ATOM	4607	CB	CYS	197	-38.786	21.979	-62.628	1.00	71.16	L1	C
ATOM	4608	SG	CYS	197	-37.815	22.934	-61.416	1.00	69.32	L1	S
ATOM	4609	N	GLN	198	-40.027	20.466	-59.718	1.00	71.96	L1	N
ATOM	4610	CA	GLN	198	-40.866	20.671	-58.542	1.00	71.74	L1	C
ATOM	4611	CB	GLN	198	-41.277	19.321	-57.952	1.00	73.01	L1	C
ATOM	4612	CG	GLN	198	-41.917	18.376	-58.954	1.00	74.84	L1	C
ATOM	4613	CD	GLN	198	-42.165	16.997	-58.373	1.00	76.39	L1	C
ATOM	4614	OE1	GLN	198	-41.697	16.676	-57.277	1.00	75.67	L1	O
ATOM	4615	NE2	GLN	198	-42.903	16.171	-59.107	1.00	77.19	L1	N
ATOM	4616	C	GLN	198	-40.140	21.493	-57.479	1.00	70.00	L1	C
ATOM	4617	O	GLN	198	-39.145	21.045	-56.905	1.00	70.10	L1	O
ATOM	4618	N	VAL	199	-40.647	22.694	-57.217	1.00	67.33	L1	N
ATOM	4619	CA	VAL	199	-40.060	23.570	-56.210	1.00	64.63	L1	C
ATOM	4620	CB	VAL	199	-39.894	25.006	-56.750	1.00	63.62	L1	C
ATOM	4621	CG1	VAL	199	-39.232	25.880	-55.700	1.00	62.58	L1	C
ATOM	4622	CG2	VAL	199	-39.072	24.990	-58.029	1.00	62.84	L1	C
ATOM	4623	C	VAL	199	-40.942	23.618	-54.969	1.00	63.15	L1	C
ATOM	4624	O	VAL	199	-42.132	23.908	-55.059	1.00	62.70	L1	O
ATOM	4625	N	THR	200	-40.359	23.331	-53.810	1.00	62.14	L1	N
ATOM	4626	CA	THR	200	-41.100	23.436	-52.558	1.00	62.84	L1	C
ATOM	4627	CB	THR	200	-40.974	22.147	-51.712	1.00	63.21	L1	C
ATOM	4628	OG1	THR	200	-41.466	21.029	-52.461	1.00	63.77	L1	O
ATOM	4629	CG2	THR	200	-41.785	22.272	-50.429	1.00	62.81	L1	C
ATOM	4630	C	THR	200	-40.611	24.623	-51.732	1.00	62.22	L1	C
ATOM	4631	O	THR	200	-39.409	24.821	-51.559	1.00	62.43	L1	O
ATOM	4632	N	HIS	201	-41.558	25.409	-51.229	1.00	61.86	L1	N
ATOM	4633	CA	HIS	201	-41.251	26.622	-50.481	1.00	61.76	L1	C
ATOM	4634	CB	HIS	201	-41.224	27.826	-51.428	1.00	61.02	L1	C
ATOM	4635	CG	HIS	201	-41.179	29.150	-50.729	1.00	59.75	L1	C
ATOM	4636	CD2	HIS	201	-40.135	29.901	-50.306	1.00	59.40	L1	C
ATOM	4637	ND1	HIS	201	-42.316	29.863	-50.415	1.00	59.04	L1	N
ATOM	4638	CE1	HIS	201	-41.974	30.998	-49.830	1.00	58.23	L1	C
ATOM	4639	NE2	HIS	201	-40.657	31.046	-49.752	1.00	58.22	L1	N
ATOM	4640	C	HIS	201	-42.299	26.843	-49.398	1.00	62.27	L1	C
ATOM	4641	O	HIS	201	-43.491	26.934	-49.690	1.00	62.33	L1	O
ATOM	4642	N	GLU	203	-41.849	26.928	-48.149	1.00	63.08	L1	N
ATOM	4643	CA	GLU	203	-42.749	27.081	-47.009	1.00	64.31	L1	C
ATOM	4644	CB	GLU	203	-43.440	28.447	-47.050	1.00	64.10	L1	C
ATOM	4645	CG	GLU	203	-42.490	29.628	-46.933	1.00	64.37	L1	C
ATOM	4646	CD	GLU	203	-41.781	29.682	-45.593	1.00	66.35	L1	C
ATOM	4647	OE1	GLU	203	-40.533	29.779	-45.584	1.00	66.23	L1	O
ATOM	4648	OE2	GLU	203	-42.471	29.629	-44.549	1.00	66.40	L1	O
ATOM	4649	C	GLU	203	-43.800	25.978	-46.978	1.00	65.33	L1	C

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ATOM   4650  O   GLU   203     -44.909  26.183 -46.490  1.00 65.44      L1   O
ATOM   4651  N   GLY   203     -43.448  24.810 -47.507  1.00 66.98      L1   N
ATOM   4652  CA  GLY   203     -44.328  23.660 -47.415  1.00 69.40      L1   C
ATOM   4653  C   GLY   203     -45.215  23.457 -48.631  1.00 71.29      L1   C
ATOM   4654  O   GLY   203     -45.869  22.422 -48.761  1.00 71.55      L1   O
ATOM   4655  N   SER   204     -45.240  24.440 -49.523  1.00 72.19      L1   N
ATOM   4656  CA  SER   204     -46.079  24.371 -50.711  1.00 73.00      L1   C
ATOM   4657  CB  SER   204     -46.931  25.638 -50.821  1.00 74.04      L1   C
ATOM   4658  OG  SER   204     -47.605  25.699 -52.068  1.00 75.31      L1   O
ATOM   4659  C   SER   204     -45.237  24.200 -51.974  1.00 73.53      L1   C
ATOM   4660  O   SER   204     -44.322  24.983 -52.231  1.00 74.09      L1   O
ATOM   4661  N   THR   205     -45.555  23.174 -52.760  1.00 73.50      L1   N
ATOM   4662  CA  THR   205     -44.801  22.864 -53.971  1.00 72.84      L1   C
ATOM   4663  CB  THR   205     -44.781  21.345 -54.243  1.00 73.16      L1   C
ATOM   4664  OG1 THR   205     -44.142  20.669 -53.153  1.00 72.97      L1   O
ATOM   4665  CG2 THR   205     -44.031  21.044 -55.533  1.00 73.27      L1   C
ATOM   4666  C   THR   205     -45.392  23.558 -55.193  1.00 72.59      L1   C
ATOM   4667  O   THR   205     -46.586  23.445 -55.465  1.00 72.07      L1   O
ATOM   4668  N   VAL   206     -44.548  24.280 -55.923  1.00 72.50      L1   N
ATOM   4669  CA  VAL   206     -44.934  24.850 -57.208  1.00 73.02      L1   C
ATOM   4670  CB  VAL   206     -44.562  26.341 -57.302  1.00 72.13      L1   C
ATOM   4671  CG1 VAL   206     -44.947  26.890 -58.666  1.00 70.61      L1   C
ATOM   4672  CG2 VAL   206     -45.257  27.117 -56.201  1.00 71.61      L1   C
ATOM   4673  C   VAL   206     -44.207  24.092 -58.310  1.00 74.77      L1   C
ATOM   4674  O   VAL   206     -42.994  23.893 -58.240  1.00 74.80      L1   O
ATOM   4675  N   GLU   207     -44.952  23.671 -59.326  1.00 76.39      L1   N
ATOM   4676  CA  GLU   207     -44.438  22.716 -60.298  1.00 77.74      L1   C
ATOM   4677  CB  GLU   207     -45.033  21.335 -60.011  1.00 78.83      L1   C
ATOM   4678  CG  GLU   207     -44.608  20.244 -60.973  1.00 81.28      L1   C
ATOM   4679  CD  GLU   207     -45.153  18.886 -60.574  1.00 82.80      L1   C
ATOM   4680  OE1 GLU   207     -45.501  18.710 -59.386  1.00 84.12      L1   O
ATOM   4681  OE2 GLU   207     -45.235  17.995 -61.445  1.00 83.95      L1   O
ATOM   4682  C   GLU   207     -44.744  23.126 -61.735  1.00 77.99      L1   C
ATOM   4683  O   GLU   207     -45.837  23.603 -62.040  1.00 77.18      L1   O
ATOM   4684  N   LYS   208     -43.765  22.941 -62.615  1.00 78.59      L1   N
ATOM   4685  CA  LYS   208     -43.973  23.134 -64.043  1.00 79.79      L1   C
ATOM   4686  CB  LYS   208     -43.289  24.418 -64.515  1.00 79.80      L1   C
ATOM   4687  CG  LYS   208     -43.911  25.692 -63.961  1.00 80.02      L1   C
ATOM   4688  CD  LYS   208     -45.400  25.764 -64.266  1.00 79.10      L1   C
ATOM   4689  CE  LYS   208     -45.956  27.147 -63.964  1.00 79.03      L1   C
ATOM   4690  NZ  LYS   208     -45.344  28.191 -64.835  1.00 77.78      L1   N
ATOM   4691  C   LYS   208     -43.433  21.941 -64.823  1.00 80.92      L1   C
ATOM   4692  O   LYS   208     -42.413  21.356 -64.454  1.00 80.76      L1   O
ATOM   4693  N   THR   209     -44.125  21.584 -65.900  1.00 82.27      L1   N
ATOM   4694  CA  THR   209     -43.779  20.402 -66.679  1.00 83.34      L1   C
ATOM   4695  CB  THR   209     -44.889  19.335 -66.582  1.00 83.02      L1   C
ATOM   4696  OG1 THR   209     -45.127  19.012 -65.207  1.00 82.81      L1   O
ATOM   4697  CG2 THR   209     -44.482  18.071 -67.327  1.00 82.62      L1   C
ATOM   4698  C   THR   209     -43.566  20.749 -68.151  1.00 85.00      L1   C
ATOM   4699  O   THR   209     -44.209  21.653 -68.687  1.00 85.03      L1   O
ATOM   4700  N   VAL   210     -42.652  20.029 -68.793  1.00 86.55      L1   N
ATOM   4701  CA  VAL   210     -42.468  20.124 -70.236  1.00 87.92      L1   C
ATOM   4702  CB  VAL   210     -41.190  20.918 -70.590  1.00 87.63      L1   C
ATOM   4703  CG1 VAL   210     -41.310  22.347 -70.085  1.00 87.34      L1   C
ATOM   4704  CG2 VAL   210     -39.970  20.240 -69.988  1.00 87.16      L1   C
ATOM   4705  C   VAL   210     -42.372  18.728 -70.848  1.00 89.44      L1   C
ATOM   4706  O   VAL   210     -41.880  17.794 -70.212  1.00 89.28      L1   O
ATOM   4707  N   ALA   211     -42.851  18.591 -72.081  1.00 91.11      L1   N
ATOM   4708  CA  ALA   211     -42.826  17.311 -72.782  1.00 92.64      L1   C
ATOM   4709  CB  ALA   211     -44.206  17.004 -73.356  1.00 92.29      L1   C
ATOM   4710  C   ALA   211     -41.785  17.331 -73.897  1.00 93.85      L1   C
ATOM   4711  O   ALA   211     -41.449  18.392 -74.424  1.00 94.16      L1   O
ATOM   4712  N   PRO   212     -41.265  16.151 -74.273  1.00 95.11      L1   N
ATOM   4713  CD  PRO   212     -41.685  14.830 -73.774  1.00 95.23      L1   C
ATOM   4714  CA  PRO   212     -40.227  16.043 -75.306  1.00 95.91      L1   C
ATOM   4715  CB  PRO   212     -39.882  14.553 -75.318  1.00 95.62      L1   C
ATOM   4716  CG  PRO   212     -41.095  13.880 -74.776  1.00 95.26      L1   C
ATOM   4717  C   PRO   212     -40.691  16.540 -76.672  1.00 96.68      L1   C
ATOM   4718  O   PRO   212     -39.878  16.917 -77.520  1.00 96.58      L1   O
ATOM   4719  N   THR   213     -42.005  16.543 -76.872  1.00 97.41      L1   N
ATOM   4720  CA  THR   213     -42.600  16.998 -78.123  1.00 98.13      L1   C
ATOM   4721  CB  THR   213     -44.081  16.575 -78.209  1.00 98.19      L1   C
ATOM   4722  OG1 THR   213     -44.792  17.076 -77.068  1.00 97.41      L1   O
ATOM   4723  CG2 THR   213     -44.195  15.056 -78.248  1.00 98.19      L1   C
ATOM   4724  C   THR   213     -42.504  18.516 -78.277  1.00 98.77      L1   C
ATOM   4725  O   THR   213     -41.782  19.146 -77.474  1.00 99.20      L1   O
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ATOM   4726  OXT THR   213     -43.142  19.057 -79.208  1.00 99.08      L1   O
TER    4727      THR   213                                             L1
ATOM   4728  CB  GLN     1     -10.333  41.335 -26.837  1.00 58.55      H1   C
ATOM   4729  CG  GLN     1     -11.368  41.133 -27.931  1.00 61.95      H1   C
ATOM   4730  CD  GLN     1     -12.786  41.172 -27.394  1.00 64.59      H1   C
ATOM   4731  OE1 GLN     1     -13.725  40.692 -28.034  1.00 66.92      H1   O
ATOM   4732  NE2 GLN     1     -12.949  41.749 -26.209  1.00 65.52      H1   N
ATOM   4733  C   GLN     1      -8.067  40.598 -27.611  1.00 51.02      H1   C
ATOM   4734  O   GLN     1      -6.978  40.491 -27.047  1.00 50.88      H1   O
ATOM   4735  N   GLN     1      -9.151  42.604 -28.597  1.00 56.41      H1   N
ATOM   4736  CA  GLN     1      -8.969  41.799 -27.352  1.00 54.79      H1   C
ATOM   4737  N   VAL     2      -8.528  39.693 -28.465  1.00 46.33      H1   N
ATOM   4738  CA  VAL     2      -7.658  38.679 -29.042  1.00 40.97      H1   C
ATOM   4739  CB  VAL     2      -8.026  37.266 -28.541  1.00 40.66      H1   C
ATOM   4740  CG1 VAL     2      -7.187  36.223 -29.261  1.00 37.87      H1   C
ATOM   4741  CG2 VAL     2      -7.800  37.175 -27.041  1.00 39.09      H1   C
ATOM   4742  C   VAL     2      -7.831  38.737 -30.551  1.00 40.14      H1   C
ATOM   4743  O   VAL     2      -8.948  38.863 -31.050  1.00 39.38      H1   O
ATOM   4744  N   GLN     3      -6.730  38.672 -31.285  1.00 38.15      H1   N
ATOM   4745  CA  GLN     3      -6.836  38.657 -32.733  1.00 37.80      H1   C
ATOM   4746  CB  GLN     3      -6.288  39.951 -33.340  1.00 41.11      H1   C
ATOM   4747  CG  GLN     3      -6.598  40.078 -34.830  1.00 48.63      H1   C
ATOM   4748  CD  GLN     3      -5.966  41.299 -35.480  1.00 54.48      H1   C
ATOM   4749  OE1 GLN     3      -5.933  41.412 -36.710  1.00 56.23      H1   O
ATOM   4750  NE2 GLN     3      -5.461  42.221 -34.658  1.00 55.22      H1   N
ATOM   4751  C   GLN     3      -6.097  37.475 -33.315  1.00 34.51      H1   C
ATOM   4752  O   GLN     3      -4.950  37.209 -32.960  1.00 34.76      H1   O
ATOM   4753  N   LEU     4      -6.774  36.764 -34.206  1.00 31.16      H1   N
ATOM   4754  CA  LEU     4      -6.152  35.706 -34.983  1.00 30.62      H1   C
ATOM   4755  CB  LEU     4      -7.036  34.455 -34.966  1.00 26.45      H1   C
ATOM   4756  CG  LEU     4      -6.920  33.556 -33.728  1.00 27.80      H1   C
ATOM   4757  CD1 LEU     4      -7.145  34.374 -32.449  1.00 25.47      H1   C
ATOM   4758  CD2 LEU     4      -7.930  32.423 -33.831  1.00 26.22      H1   C
ATOM   4759  C   LEU     4      -5.943  36.200 -36.419  1.00 32.23      H1   C
ATOM   4760  O   LEU     4      -6.899  36.554 -37.120  1.00 31.55      H1   O
ATOM   4761  N   GLN     5      -4.683  36.229 -36.840  1.00 31.02      H1   N
ATOM   4762  CA  GLN     5      -4.307  36.758 -38.144  1.00 31.99      H1   C
ATOM   4763  CB  GLN     5      -3.168  37.772 -37.976  1.00 35.77      H1   C
ATOM   4764  CG  GLN     5      -2.719  38.446 -39.262  1.00 41.14      H1   C
ATOM   4765  CD  GLN     5      -3.830  39.250 -39.904  1.00 45.66      H1   C
ATOM   4766  OE1 GLN     5      -3.749  39.625 -41.073  1.00 48.29      H1   O
ATOM   4767  NE2 GLN     5      -4.881  39.519 -39.137  1.00 48.64      H1   N
ATOM   4768  C   GLN     5      -3.863  35.614 -39.050  1.00 29.87      H1   C
ATOM   4769  O   GLN     5      -2.974  34.842 -38.690  1.00 31.50      H1   O
ATOM   4770  N   GLN     6      -4.482  35.509 -40.221  1.00 28.29      H1   N
ATOM   4771  CA  GLN     6      -4.243  34.377 -41.117  1.00 30.55      H1   C
ATOM   4772  CB  GLN     6      -5.564  33.740 -41.540  1.00 29.81      H1   C
ATOM   4773  CG  GLN     6      -6.344  33.071 -40.433  1.00 30.43      H1   C
ATOM   4774  CD  GLN     6      -7.562  32.345 -40.972  1.00 28.63      H1   C
ATOM   4775  OE1 GLN     6      -8.691  32.631 -40.580  1.00 30.41      H1   O
ATOM   4776  NE2 GLN     6      -7.336  31.408 -41.882  1.00 26.47      H1   N
ATOM   4777  C   GLN     6      -3.511  34.800 -42.376  1.00 30.75      H1   C
ATOM   4778  O   GLN     6      -3.696  35.916 -42.858  1.00 32.04      H1   O
ATOM   4779  N   TRP     7      -2.695  33.904 -42.918  1.00 28.95      H1   N
ATOM   4780  CA  TRP     7      -2.211  34.076 -44.278  1.00 28.90      H1   C
ATOM   4781  CB  TRP     7      -0.966  34.976 -44.301  1.00 28.68      H1   C
ATOM   4782  CG  TRP     7       0.236  34.402 -43.598  1.00 27.66      H1   C
ATOM   4783  CD2 TRP     7       0.704  34.740 -42.286  1.00 25.98      H1   C
ATOM   4784  CE2 TRP     7       1.888  34.010 -42.063  1.00 27.69      H1   C
ATOM   4785  CE3 TRP     7       0.238  35.594 -41.282  1.00 26.98      H1   C
ATOM   4786  CD1 TRP     7       1.128  33.499 -44.101  1.00 27.44      H1   C
ATOM   4787  NE1 TRP     7       2.126  33.258 -43.185  1.00 28.36      H1   N
ATOM   4788  CZ2 TRP     7       2.612  34.109 -40.880  1.00 28.83      H1   C
ATOM   4789  CZ3 TRP     7       0.956  35.692 -40.111  1.00 28.53      H1   C
ATOM   4790  CH2 TRP     7       2.132  34.955 -39.917  1.00 30.19      H1   C
ATOM   4791  C   TRP     7      -1.899  32.733 -44.923  1.00 28.22      H1   C
ATOM   4792  O   TRP     7      -2.070  31.681 -44.307  1.00 28.99      H1   O
ATOM   4793  N   GLY     8      -1.432  32.783 -46.166  1.00 28.35      H1   N
ATOM   4794  CA  GLY     8      -1.234  31.575 -46.945  1.00 26.37      H1   C
ATOM   4795  C   GLY     8      -1.920  31.683 -48.295  1.00 27.33      H1   C
ATOM   4796  O   GLY     8      -2.925  32.386 -48.444  1.00 27.76      H1   O
ATOM   4797  N   ALA     9      -1.377  30.984 -49.282  1.00 27.19      H1   N
ATOM   4798  CA  ALA     9      -1.887  31.057 -50.646  1.00 28.12      H1   C
ATOM   4799  CB  ALA     9      -0.828  30.527 -51.619  1.00 27.62      H1   C
ATOM   4800  C   ALA     9      -3.179  30.253 -50.791  1.00 28.31      H1   C
ATOM   4801  O   ALA     9      -3.233  29.079 -50.431  1.00 28.12      H1   O
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ATOM   4802  N   GLY   10      -4.212  30.888 -51.330  1.00 29.12      H1   N
ATOM   4803  CA  GLY   10      -5.493  30.222 -51.479  1.00 30.10      H1   C
ATOM   4804  C   GLY   10      -5.820  29.691 -52.871  1.00 32.33      H1   C
ATOM   4805  O   GLY   10      -6.659  28.798 -53.005  1.00 32.38      H1   O
ATOM   4806  N   LEU   11      -5.177  30.221 -53.909  1.00 31.52      H1   N
ATOM   4807  CA  LEU   11      -5.494  29.799 -55.275  1.00 33.59      H1   C
ATOM   4808  CB  LEU   11      -5.308  30.959 -56.255  1.00 36.39      H1   C
ATOM   4809  CG  LEU   11      -5.584  30.620 -57.725  1.00 40.88      H1   C
ATOM   4810  CD1 LEU   11      -6.969  29.990 -57.844  1.00 43.73      H1   C
ATOM   4811  CD2 LEU   11      -5.491  31.877 -58.586  1.00 40.70      H1   C
ATOM   4812  C   LEU   11      -4.626  28.629 -55.697  1.00 34.18      H1   C
ATOM   4813  O   LEU   11      -3.429  28.787 -55.936  1.00 35.52      H1   O
ATOM   4814  N   LEU   12      -5.232  27.448 -55.785  1.00 34.06      H1   N
ATOM   4815  CA  LEU   12      -4.470  26.219 -55.974  1.00 33.09      H1   C
ATOM   4816  CB  LEU   12      -4.533  25.358 -54.711  1.00 34.00      H1   C
ATOM   4817  CG  LEU   12      -4.079  25.990 -53.395  1.00 35.02      H1   C
ATOM   4818  CD1 LEU   12      -4.057  24.931 -52.297  1.00 33.56      H1   C
ATOM   4819  CD2 LEU   12      -2.698  26.606 -53.580  1.00 36.04      H1   C
ATOM   4820  C   LEU   12      -4.979  25.401 -57.147  1.00 33.61      H1   C
ATOM   4821  O   LEU   12      -6.129  25.542 -57.566  1.00 34.76      H1   O
ATOM   4822  N   LYS   13      -4.115  24.542 -57.671  1.00 33.61      H1   N
ATOM   4823  CA  LYS   13      -4.533  23.537 -58.638  1.00 35.02      H1   C
ATOM   4824  CB  LYS   13      -3.558  23.486 -59.813  1.00 35.86      H1   C
ATOM   4825  CG  LYS   13      -3.544  24.732 -60.671  1.00 39.05      H1   C
ATOM   4826  CD  LYS   13      -2.763  24.491 -61.952  0.50 41.55      H1   C
ATOM   4827  CE  LYS   13      -2.408  25.800 -62.627  1.00 44.69      H1   C
ATOM   4828  NZ  LYS   13      -1.530  26.633 -61.750  1.00 48.57      H1   N
ATOM   4829  C   LYS   13      -4.584  22.171 -57.967  1.00 35.21      H1   C
ATOM   4830  O   LYS   13      -3.887  21.924 -56.983  1.00 37.52      H1   O
ATOM   4831  N   PRO   14      -5.405  21.258 -58.499  1.00 34.61      H1   N
ATOM   4832  CD  PRO   14      -6.318  21.454 -59.638  1.00 34.09      H1   C
ATOM   4833  CA  PRO   14      -5.476  19.894 -57.969  1.00 34.50      H1   C
ATOM   4834  CB  PRO   14      -6.368  19.169 -58.974  1.00 34.26      H1   C
ATOM   4835  CG  PRO   14      -7.214  20.257 -59.557  1.00 33.95      H1   C
ATOM   4836  C   PRO   14      -4.093  19.253 -57.854  1.00 34.86      H1   C
ATOM   4837  O   PRO   14      -3.222  19.493 -58.690  1.00 35.81      H1   O
ATOM   4838  N   SER   15      -3.914  18.455 -56.803  1.00 34.00      H1   N
ATOM   4839  CA  SER   15      -2.684  17.718 -56.515  1.00 34.80      H1   C
ATOM   4840  CB  SER   15      -1.999  17.245 -57.805  1.00 35.51      H1   C
ATOM   4841  OG  SER   15      -1.036  18.192 -58.234  1.00 38.11      H1   O
ATOM   4842  C   SER   15      -1.694  18.534 -55.684  1.00 34.51      H1   C
ATOM   4843  O   SER   15      -0.761  17.980 -55.099  1.00 35.24      H1   O
ATOM   4844  N   GLU   16      -1.901  19.845 -55.622  1.00 34.15      H1   N
ATOM   4845  CA  GLU   16      -1.018  20.705 -54.845  1.00 34.52      H1   C
ATOM   4846  CB  GLU   16      -1.183  22.164 -55.283  1.00 36.08      H1   C
ATOM   4847  CG  GLU   16      -0.552  22.478 -56.646  1.00 41.58      H1   C
ATOM   4848  CD  GLU   16      -0.918  23.864 -57.160  1.00 44.69      H1   C
ATOM   4849  OE1 GLU   16      -1.573  24.626 -56.423  1.00 44.93      H1   O
ATOM   4850  OE2 GLU   16      -0.555  24.193 -58.309  1.00 49.52      H1   O
ATOM   4851  C   GLU   16      -1.256  20.583 -53.338  1.00 34.67      H1   C
ATOM   4852  O   GLU   16      -2.252  20.008 -52.898  1.00 32.76      H1   O
ATOM   4853  N   THR   17      -0.319  21.120 -52.559  1.00 33.99      H1   N
ATOM   4854  CA  THR   17      -0.421  21.165 -51.104  1.00 32.35      H1   C
ATOM   4855  CB  THR   17       0.928  20.860 -50.447  1.00 31.91      H1   C
ATOM   4856  OG1 THR   17       1.289  19.505 -50.722  1.00 35.50      H1   O
ATOM   4857  CG2 THR   17       0.853  21.073 -48.940  1.00 31.69      H1   C
ATOM   4858  C   THR   17      -0.867  22.539 -50.627  1.00 31.96      H1   C
ATOM   4859  O   THR   17      -0.296  23.554 -51.024  1.00 31.96      H1   O
ATOM   4860  N   LEU   18      -1.889  22.565 -49.774  1.00 29.65      H1   N
ATOM   4861  CA  LEU   18      -2.355  23.812 -49.179  1.00 28.49      H1   C
ATOM   4862  CB  LEU   18      -3.841  23.720 -48.831  1.00 27.90      H1   C
ATOM   4863  CG  LEU   18      -4.387  24.865 -47.973  1.00 27.75      H1   C
ATOM   4864  CD1 LEU   18      -4.433  26.133 -48.808  1.00 28.48      H1   C
ATOM   4865  CD2 LEU   18      -5.784  24.520 -47.467  1.00 27.32      H1   C
ATOM   4866  C   LEU   18      -1.557  24.086 -47.914  1.00 29.31      H1   C
ATOM   4867  O   LEU   18      -1.324  23.183 -47.105  1.00 29.34      H1   O
ATOM   4868  N   SER   19      -1.138  25.332 -47.740  1.00 28.71      H1   N
ATOM   4869  CA  SER   19      -0.342  25.693 -46.580  1.00 28.95      H1   C
ATOM   4870  CB  SER   19       1.136  25.745 -46.969  1.00 29.72      H1   C
ATOM   4871  OG  SER   19       1.927  26.134 -45.861  1.00 37.84      H1   O
ATOM   4872  C   SER   19      -0.790  27.032 -46.000  1.00 28.99      H1   C
ATOM   4873  O   SER   19      -0.614  28.084 -46.611  1.00 30.84      H1   O
ATOM   4874  N   LEU   20      -1.384  26.985 -44.814  1.00 28.20      H1   N
ATOM   4875  CA  LEU   20      -1.932  28.179 -44.193  1.00 26.04      H1   C
ATOM   4876  CB  LEU   20      -3.447  28.056 -44.050  1.00 25.36      H1   C
ATOM   4877  CG  LEU   20      -4.265  27.889 -45.334  1.00 26.53      H1   C
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ATOM   4878  CD1 LEU   20      -5.744  27.831 -44.970  1.00 23.87      H1   C
ATOM   4879  CD2 LEU   20      -3.999  29.053 -46.288  1.00 25.15      H1   C
ATOM   4880  C   LEU   20      -1.308  28.376 -42.825  1.00 25.77      H1   C
ATOM   4881  O   LEU   20      -0.850  27.427 -42.197  1.00 26.14      H1   O
ATOM   4882  N   THR   21      -1.299  29.618 -42.365  1.00 26.29      H1   N
ATOM   4883  CA  THR   21      -0.685  29.947 -41.093  1.00 27.57      H1   C
ATOM   4884  CB  THR   21       0.691  30.616 -41.314  1.00 28.87      H1   C
ATOM   4885  OG1 THR   21       1.536  29.733 -42.072  1.00 30.29      H1   O
ATOM   4886  CG2 THR   21       1.348  30.928 -39.988  1.00 26.32      H1   C
ATOM   4887  C   THR   21      -1.599  30.897 -40.332  1.00 27.47      H1   C
ATOM   4888  O   THR   21      -2.294  31.715 -40.930  1.00 26.74      H1   O
ATOM   4889  N   CYS   22      -1.606  30.778 -39.011  1.00 28.77      H1   N
ATOM   4890  CA  CYS   22      -2.393  31.675 -38.175  1.00 29.72      H1   C
ATOM   4891  C   CYS   22      -1.469  32.192 -37.082  1.00 30.55      H1   C
ATOM   4892  O   CYS   22      -0.752  31.411 -36.456  1.00 30.73      H1   O
ATOM   4893  CB  CYS   22      -3.564  30.899 -37.565  1.00 30.30      H1   C
ATOM   4894  SG  CYS   22      -4.786  31.772 -36.524  1.00 31.82      H1   S
ATOM   4895  N   ALA   23      -1.481  33.504 -36.864  1.00 29.76      H1   N
ATOM   4896  CA  ALA   23      -0.725  34.101 -35.771  1.00 31.19      H1   C
ATOM   4897  CB  ALA   23       0.187  35.216 -36.298  1.00 31.06      H1   C
ATOM   4898  C   ALA   23      -1.684  34.662 -34.732  1.00 29.91      H1   C
ATOM   4899  O   ALA   23      -2.677  35.300 -35.075  1.00 29.39      H1   O
ATOM   4900  N   VAL   24      -1.375  34.429 -33.462  1.00 29.49      H1   N
ATOM   4901  CA  VAL   24      -2.243  34.855 -32.375  1.00 29.62      H1   C
ATOM   4902  CB  VAL   24      -2.415  33.717 -31.352  1.00 28.75      H1   C
ATOM   4903  CG1 VAL   24      -3.211  34.202 -30.149  1.00 28.80      H1   C
ATOM   4904  CG2 VAL   24      -3.112  32.543 -32.015  1.00 26.06      H1   C
ATOM   4905  C   VAL   24      -1.708  36.095 -31.663  1.00 31.01      H1   C
ATOM   4906  O   VAL   24      -0.566  36.118 -31.206  1.00 32.54      H1   O
ATOM   4907  N   TYR   25      -2.543  37.124 -31.567  1.00 31.55      H1   N
ATOM   4908  CA  TYR   25      -2.175  38.336 -30.848  1.00 32.59      H1   C
ATOM   4909  CB  TYR   25      -2.177  39.527 -31.807  1.00 34.98      H1   C
ATOM   4910  CG  TYR   25      -1.229  39.346 -32.968  1.00 36.34      H1   C
ATOM   4911  CD1 TYR   25      -1.704  39.045 -34.236  1.00 37.36      H1   C
ATOM   4912  CE1 TYR   25      -0.838  38.843 -35.297  1.00 40.15      H1   C
ATOM   4913  CD2 TYR   25       0.144  39.445 -32.788  1.00 38.49      H1   C
ATOM   4914  CE2 TYR   25       1.020  39.243 -33.843  1.00 40.50      H1   C
ATOM   4915  CZ  TYR   25       0.523  38.942 -35.093  1.00 40.26      H1   C
ATOM   4916  OH  TYR   25       1.389  38.726 -36.142  1.00 44.41      H1   O
ATOM   4917  C   TYR   25      -3.129  38.594 -29.689  1.00 32.47      H1   C
ATOM   4918  O   TYR   25      -4.289  38.942 -29.896  1.00 32.98      H1   O
ATOM   4919  N   GLY   26      -2.637  38.415 -28.468  1.00 31.79      H1   N
ATOM   4920  CA  GLY   26      -3.465  38.647 -27.296  1.00 32.41      H1   C
ATOM   4921  C   GLY   26      -3.828  37.380 -26.537  1.00 32.65      H1   C
ATOM   4922  O   GLY   26      -3.801  36.279 -27.093  1.00 31.74      H1   O
ATOM   4923  N   GLY   27      -4.167  37.539 -25.259  1.00 32.32      H1   N
ATOM   4924  CA  GLY   27      -4.515  36.399 -24.431  1.00 30.56      H1   C
ATOM   4925  C   GLY   27      -3.347  35.444 -24.311  1.00 31.96      H1   C
ATOM   4926  O   GLY   27      -2.258  35.738 -24.791  1.00 33.98      H1   O
ATOM   4927  N   SER   28      -3.570  34.297 -23.677  1.00 31.00      H1   N
ATOM   4928  CA  SER   28      -2.546  33.261 -23.580  1.00 29.78      H1   C
ATOM   4929  CB  SER   28      -2.782  32.397 -22.340  1.00 27.61      H1   C
ATOM   4930  OG  SER   28      -2.050  31.184 -22.424  1.00 29.12      H1   O
ATOM   4931  C   SER   28      -2.535  32.367 -24.815  1.00 29.77      H1   C
ATOM   4932  O   SER   28      -3.569  32.152 -25.442  1.00 31.74      H1   O
ATOM   4933  N   PHE   29      -1.365  31.836 -25.153  1.00 28.60      H1   N
ATOM   4934  CA  PHE   29      -1.246  30.952 -26.301  1.00 28.86      H1   C
ATOM   4935  CB  PHE   29       0.048  31.229 -27.077  1.00 28.06      H1   C
ATOM   4936  CG  PHE   29       0.202  30.383 -28.307  1.00 26.67      H1   C
ATOM   4937  CD1 PHE   29      -0.550  30.638 -29.436  1.00 28.66      H1   C
ATOM   4938  CD2 PHE   29       1.081  29.317 -28.327  1.00 27.57      H1   C
ATOM   4939  CE1 PHE   29      -0.431  29.841 -30.559  1.00 29.40      H1   C
ATOM   4940  CE2 PHE   29       1.205  28.518 -29.442  1.00 27.25      H1   C
ATOM   4941  CZ  PHE   29       0.452  28.778 -30.560  1.00 28.48      H1   C
ATOM   4942  C   PHE   29      -1.260  29.506 -25.851  1.00 28.91      H1   C
ATOM   4943  O   PHE   29      -1.893  28.653 -26.483  1.00 31.89      H1   O
ATOM   4944  N   SER   30      -0.566  29.226 -24.755  1.00 27.90      H1   N
ATOM   4945  CA  SER   30      -0.390  27.849 -24.311  1.00 29.14      H1   C
ATOM   4946  CB  SER   30       0.850  27.734 -23.418  1.00 31.78      H1   C
ATOM   4947  OG  SER   30       0.687  28.470 -22.221  1.00 36.30      H1   O
ATOM   4948  C   SER   30      -1.612  27.295 -23.574  1.00 27.44      H1   C
ATOM   4949  O   SER   30      -1.699  26.097 -23.340  1.00 26.60      H1   O
ATOM   4950  N   ALA   31      -2.558  28.163 -23.227  1.00 27.53      H1   N
ATOM   4951  CA  ALA   31      -3.706  27.760 -22.413  1.00 27.10      H1   C
ATOM   4952  CB  ALA   31      -4.175  28.937 -21.580  1.00 23.65      H1   C
ATOM   4953  C   ALA   31      -4.888  27.190 -23.211  1.00 27.46      H1   C
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ATOM   4954  O   ALA  31      -5.917  26.850 -22.633  1.00 28.90      H1   O
ATOM   4955  N   TYR  32      -4.743  27.091 -24.527  1.00 26.48      H1   N
ATOM   4956  CA  TYR  32      -5.864  26.726 -25.396  1.00 25.86      H1   C
ATOM   4957  CB  TYR  32      -6.393  27.962 -26.132  1.00 24.51      H1   C
ATOM   4958  CG  TYR  32      -6.878  29.066 -25.223  1.00 27.00      H1   C
ATOM   4959  CD1 TYR  32      -6.062  30.146 -24.912  1.00 27.70      H1   C
ATOM   4960  CE1 TYR  32      -6.510  31.167 -24.086  1.00 27.16      H1   C
ATOM   4961  CD2 TYR  32      -8.161  29.034 -24.681  1.00 25.53      H1   C
ATOM   4962  CE2 TYR  32      -8.616  30.045 -23.857  1.00 25.30      H1   C
ATOM   4963  CZ  TYR  32      -7.790  31.109 -23.564  1.00 26.69      H1   C
ATOM   4964  OH  TYR  32      -8.250  32.131 -22.771  1.00 28.27      H1   O
ATOM   4965  C   TYR  32      -5.486  25.688 -26.440  1.00 24.12      H1   C
ATOM   4966  O   TYR  32      -4.327  25.601 -26.856  1.00 24.09      H1   O
ATOM   4967  N   TYR  33      -6.471  24.917 -26.887  1.00 22.70      H1   N
ATOM   4968  CA  TYR  33      -6.348  24.241 -28.173  1.00 22.68      H1   C
ATOM   4969  CB  TYR  33      -7.374  23.116 -28.298  1.00 22.31      H1   C
ATOM   4970  CG  TYR  33      -7.016  21.898 -27.492  1.00 21.33      H1   C
ATOM   4971  CD1 TYR  33      -6.239  20.893 -28.042  1.00 20.79      H1   C
ATOM   4972  CE1 TYR  33      -5.886  19.783 -27.311  1.00 22.09      H1   C
ATOM   4973  CD2 TYR  33      -7.440  21.758 -26.173  1.00 22.16      H1   C
ATOM   4974  CE2 TYR  33      -7.092  20.642 -25.429  1.00 23.42      H1   C
ATOM   4975  CZ  TYR  33      -6.311  19.659 -26.010  1.00 23.95      H1   C
ATOM   4976  OH  TYR  33      -5.941  18.549 -25.298  1.00 23.94      H1   O
ATOM   4977  C   TYR  33      -6.554  25.244 -29.299  1.00 22.45      H1   C
ATOM   4978  O   TYR  33      -7.292  26.218 -29.155  1.00 22.76      H1   O
ATOM   4979  N   TRP  34      -5.887  25.002 -30.417  1.00 22.98      H1   N
ATOM   4980  CA  TRP  34      -6.012  25.859 -31.582  1.00 23.60      H1   C
ATOM   4981  CB  TRP  34      -4.650  26.490 -31.885  1.00 23.80      H1   C
ATOM   4982  CG  TRP  34      -4.247  27.427 -30.790  1.00 23.49      H1   C
ATOM   4983  CD2 TRP  34      -4.745  28.749 -30.577  1.00 22.41      H1   C
ATOM   4984  CE2 TRP  34      -4.165  29.227 -29.385  1.00 25.04      H1   C
ATOM   4985  CE3 TRP  34      -5.629  29.578 -31.280  1.00 23.05      H1   C
ATOM   4986  CD1 TRP  34      -3.402  27.165 -29.752  1.00 24.44      H1   C
ATOM   4987  NE1 TRP  34      -3.347  28.240 -28.900  1.00 23.72      H1   N
ATOM   4988  CZ2 TRP  34      -4.442  30.495 -28.879  1.00 21.78      H1   C
ATOM   4989  CZ3 TRP  34      -5.900  30.833 -30.777  1.00 21.48      H1   C
ATOM   4990  CH2 TRP  34      -5.309  31.280 -29.587  1.00 22.95      H1   C
ATOM   4991  C   TRP  34      -6.530  25.048 -32.766  1.00 21.45      H1   C
ATOM   4992  O   TRP  34      -5.988  23.987 -33.070  1.00 21.93      H1   O
ATOM   4993  N   ASN  35      -7.578  25.556 -33.420  1.00 19.88      H1   N
ATOM   4994  CA  ASN  35      -8.355  24.785 -34.392  1.00 20.46      H1   C
ATOM   4995  CB  ASN  35      -9.841  24.803 -34.021  1.00 20.89      H1   C
ATOM   4996  CG  ASN  35     -10.101  24.285 -32.627  1.00 23.23      H1   C
ATOM   4997  OD1 ASN  35     -10.302  23.087 -32.428  1.00 24.03      H1   O
ATOM   4998  ND2 ASN  35     -10.099  25.185 -31.650  1.00 22.85      H1   N
ATOM   4999  C   ASN  35      -8.236  25.315 -35.810  1.00 20.87      H1   C
ATOM   5000  O   ASN  35      -8.048  26.505 -36.019  1.00 23.07      H1   O
ATOM   5001  N   TRP  36      -8.377  24.418 -36.782  1.00 22.36      H1   N
ATOM   5002  CA  TRP  36      -8.702  24.801 -38.152  1.00 22.05      H1   C
ATOM   5003  CB  TRP  36      -7.658  24.246 -39.121  1.00 22.90      H1   C
ATOM   5004  CG  TRP  36      -6.318  24.938 -39.025  1.00 25.04      H1   C
ATOM   5005  CD2 TRP  36      -5.956  26.193 -39.619  1.00 22.07      H1   C
ATOM   5006  CE2 TRP  36      -4.612  26.439 -39.284  1.00 24.03      H1   C
ATOM   5007  CE3 TRP  36      -6.639  27.129 -40.403  1.00 22.32      H1   C
ATOM   5008  CD1 TRP  36      -5.208  24.490 -38.370  1.00 20.33      H1   C
ATOM   5009  NE1 TRP  36      -4.179  25.385 -38.521  1.00 23.82      H1   N
ATOM   5010  CZ2 TRP  36      -3.933  27.587 -39.706  1.00 23.84      H1   C
ATOM   5011  CZ3 TRP  36      -5.968  28.266 -40.821  1.00 24.79      H1   C
ATOM   5012  CH2 TRP  36      -4.627  28.486 -40.471  1.00 24.85      H1   C
ATOM   5013  C   TRP  36     -10.087  24.261 -38.517  1.00 22.80      H1   C
ATOM   5014  O   TRP  36     -10.434  23.122 -38.193  1.00 21.90      H1   O
ATOM   5015  N   ILE  37     -10.871  25.094 -39.187  1.00 22.71      H1   N
ATOM   5016  CA  ILE  37     -12.244  24.773 -39.554  1.00 21.18      H1   C
ATOM   5017  CB  ILE  37     -13.232  25.478 -38.591  1.00 22.23      H1   C
ATOM   5018  CG2 ILE  37     -14.669  25.262 -39.039  1.00 20.06      H1   C
ATOM   5019  CG1 ILE  37     -13.024  24.950 -37.171  1.00 21.40      H1   C
ATOM   5020  CD1 ILE  37     -13.704  25.776 -36.102  1.00 20.52      H1   C
ATOM   5021  C   ILE  37     -12.445  25.310 -40.966  1.00 23.40      H1   C
ATOM   5022  O   ILE  37     -11.964  26.395 -41.285  1.00 23.50      H1   O
ATOM   5023  N   ARG  38     -13.134  24.571 -41.827  1.00 22.17      H1   N
ATOM   5024  CA  ARG  38     -13.417  25.120 -43.151  1.00 23.30      H1   C
ATOM   5025  CB  ARG  38     -12.680  24.328 -44.237  1.00 22.10      H1   C
ATOM   5026  CG  ARG  38     -13.113  22.886 -44.372  1.00 24.22      H1   C
ATOM   5027  CD  ARG  38     -12.272  22.174 -45.418  1.00 23.06      H1   C
ATOM   5028  NE  ARG  38     -12.792  20.840 -45.694  1.00 23.01      H1   N
ATOM   5029  CZ  ARG  38     -12.283  20.000 -46.587  1.00 22.72      H1   C
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ATOM	5030	NH1	ARG	38	-11.212	20.337	-47.310	1.00	18.87	H1	N
ATOM	5031	NH2	ARG	38	-12.875	18.832	-46.782	1.00	20.60	H1	N
ATOM	5032	C	ARG	38	-14.906	25.185	-43.469	1.00	23.88	H1	C
ATOM	5033	O	ARG	38	-15.720	24.482	-42.863	1.00	23.72	H1	O
ATOM	5034	N	GLN	39	-15.256	26.055	-44.411	1.00	24.72	H1	N
ATOM	5035	CA	GLN	39	-16.638	26.222	-44.829	1.00	24.67	H1	C
ATOM	5036	CB	GLN	39	-17.224	27.509	-44.238	1.00	25.79	H1	C
ATOM	5037	CG	GLN	39	-18.684	27.793	-44.635	1.00	27.90	H1	C
ATOM	5038	CD	GLN	39	-19.318	28.866	-43.757	1.00	29.29	H1	C
ATOM	5039	OE1	GLN	39	-18.788	29.966	-43.633	1.00	32.06	H1	O
ATOM	5040	NE2	GLN	39	-20.447	28.545	-43.141	1.00	28.85	H1	N
ATOM	5041	C	GLN	39	-16.690	26.288	-46.345	1.00	25.97	H1	C
ATOM	5042	O	GLN	39	-16.266	27.270	-46.947	1.00	25.21	H1	O
ATOM	5043	N	PRO	40	-17.213	25.233	-46.981	1.00	26.39	H1	N
ATOM	5044	CD	PRO	40	-17.750	24.017	-46.345	1.00	28.52	H1	C
ATOM	5045	CA	PRO	40	-17.377	25.213	-48.433	1.00	29.08	H1	C
ATOM	5046	CB	PRO	40	-17.779	23.768	-48.731	1.00	27.66	H1	C
ATOM	5047	CG	PRO	40	-18.437	23.304	-47.485	1.00	28.54	H1	C
ATOM	5048	C	PRO	40	-18.448	26.219	-48.836	1.00	32.62	H1	C
ATOM	5049	O	PRO	40	-19.359	26.516	-48.061	1.00	32.18	H1	O
ATOM	5050	N	PRO	41	-18.345	26.766	-50.053	1.00	36.33	H1	N
ATOM	5051	CD	PRO	41	-17.406	26.340	-51.105	1.00	37.35	H1	C
ATOM	5052	CA	PRO	41	-19.204	27.872	-50.494	1.00	37.78	H1	C
ATOM	5053	CB	PRO	41	-18.839	28.044	-51.969	1.00	39.57	H1	C
ATOM	5054	CG	PRO	41	-17.449	27.484	-52.074	1.00	40.10	H1	C
ATOM	5055	C	PRO	41	-20.687	27.568	-50.307	1.00	38.36	H1	C
ATOM	5056	O	PRO	41	-21.165	26.510	-50.704	1.00	37.50	H1	O
ATOM	5057	N	GLY	42	-21.406	28.497	-49.682	1.00	40.85	H1	N
ATOM	5058	CA	GLY	42	-22.837	28.332	-49.499	1.00	43.07	H1	C
ATOM	5059	C	GLY	42	-23.227	27.130	-48.653	1.00	44.02	H1	C
ATOM	5060	O	GLY	42	-24.360	26.657	-48.727	1.00	44.58	H1	O
ATOM	5061	N	LYS	43	-22.297	26.634	-47.842	1.00	42.75	H1	N
ATOM	5062	CA	LYS	43	-22.551	25.440	-47.046	1.00	41.76	H1	C
ATOM	5063	CB	LYS	43	-21.778	24.254	-47.627	1.00	44.31	H1	C
ATOM	5064	CG	LYS	43	-22.140	23.962	-49.074	1.00	48.96	H1	C
ATOM	5065	CD	LYS	43	-22.254	22.468	-49.324	1.00	51.38	H1	C
ATOM	5066	CE	LYS	43	-23.015	22.187	-50.617	1.00	54.57	H1	C
ATOM	5067	NZ	LYS	43	-22.406	22.886	-51.784	1.00	54.57	H1	N
ATOM	5068	C	LYS	43	-22.171	25.647	-45.590	1.00	37.71	H1	C
ATOM	5069	O	LYS	43	-21.889	26.766	-45.175	1.00	40.41	H1	O
ATOM	5070	N	GLY	44	-22.160	24.562	-44.823	1.00	32.46	H1	N
ATOM	5071	CA	GLY	44	-21.927	24.654	-43.393	1.00	28.89	H1	C
ATOM	5072	C	GLY	44	-20.473	24.575	-42.949	1.00	28.33	H1	C
ATOM	5073	O	GLY	44	-19.570	25.015	-43.654	1.00	28.78	H1	O
ATOM	5074	N	LEU	45	-20.251	24.004	-41.770	1.00	26.37	H1	N
ATOM	5075	CA	LEU	45	-18.938	24.020	-41.139	1.00	24.45	H1	C
ATOM	5076	CB	LEU	45	-19.024	24.701	-39.766	1.00	23.45	H1	C
ATOM	5077	CG	LEU	45	-19.498	26.154	-39.752	1.00	24.17	H1	C
ATOM	5078	CD1	LEU	45	-19.692	26.636	-38.323	1.00	20.49	H1	C
ATOM	5079	CD2	LEU	45	-18.471	27.012	-40.474	1.00	23.06	H1	C
ATOM	5080	C	LEU	45	-18.379	22.616	-40.965	1.00	22.98	H1	C
ATOM	5081	O	LEU	45	-19.101	21.689	-40.600	1.00	21.96	H1	O
ATOM	5082	N	GLU	46	-17.081	22.475	-41.208	1.00	22.29	H1	N
ATOM	5083	CA	GLU	46	-16.397	21.199	-41.044	1.00	22.11	H1	C
ATOM	5084	CB	GLU	46	-16.060	20.609	-42.416	1.00	21.07	H1	C
ATOM	5085	CG	GLU	46	-15.392	19.253	-42.342	1.00	23.85	H1	C
ATOM	5086	CD	GLU	46	-15.117	18.646	-43.711	1.00	26.12	H1	C
ATOM	5087	OE1	GLU	46	-15.068	19.390	-44.714	1.00	25.34	H1	O
ATOM	5088	OE2	GLU	46	-14.947	17.414	-43.779	1.00	28.37	H1	O
ATOM	5089	C	GLU	46	-15.112	21.411	-40.245	1.00	22.69	H1	C
ATOM	5090	O	GLU	46	-14.246	22.188	-40.643	1.00	22.85	H1	O
ATOM	5091	N	TRP	47	-14.994	20.727	-39.113	1.00	23.32	H1	N
ATOM	5092	CA	TRP	47	-13.810	20.853	-38.271	1.00	24.50	H1	C
ATOM	5093	CB	TRP	47	-14.124	20.356	-36.862	1.00	23.99	H1	C
ATOM	5094	CG	TRP	47	-12.985	20.457	-35.899	1.00	23.86	H1	C
ATOM	5095	CD2	TRP	47	-12.225	19.369	-35.357	1.00	23.15	H1	C
ATOM	5096	CE2	TRP	47	-11.346	19.912	-34.401	1.00	22.05	H1	C
ATOM	5097	CE3	TRP	47	-12.209	17.986	-35.584	1.00	22.33	H1	C
ATOM	5098	CD1	TRP	47	-12.536	21.586	-35.276	1.00	23.05	H1	C
ATOM	5099	NE1	TRP	47	-11.555	21.268	-34.373	1.00	23.21	H1	N
ATOM	5100	CZ2	TRP	47	-10.461	19.124	-33.665	1.00	20.75	H1	C
ATOM	5101	CZ3	TRP	47	-11.326	17.200	-34.852	1.00	20.87	H1	C
ATOM	5102	CH2	TRP	47	-10.467	17.774	-33.903	1.00	23.70	H1	C
ATOM	5103	C	TRP	47	-12.687	20.020	-38.872	1.00	24.58	H1	C
ATOM	5104	O	TRP	47	-12.877	18.849	-39.176	1.00	23.77	H1	O
ATOM	5105	N	ILE	48	-11.519	20.626	-39.042	1.00	24.78	H1	N

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ATOM   5106  CA  ILE    48     -10.389  19.929 -39.647  1.00 24.00      H1   C
ATOM   5107  CB  ILE    48      -9.526  20.913 -40.481  1.00 24.53      H1   C
ATOM   5108  CG2 ILE    48      -8.285  20.196 -41.038  1.00 24.01      H1   C
ATOM   5109  CG1 ILE    48     -10.383  21.502 -41.611  1.00 23.41      H1   C
ATOM   5110  CD1 ILE    48      -9.698  22.583 -42.429  1.00 24.34      H1   C
ATOM   5111  C   ILE    48      -9.530  19.259 -38.575  1.00 23.04      H1   C
ATOM   5112  O   ILE    48      -9.181  18.080 -38.689  1.00 21.34      H1   O
ATOM   5113  N   GLY    49      -9.207  20.011 -37.528  1.00 22.63      H1   N
ATOM   5114  CA  GLY    49      -8.387  19.476 -36.459  1.00 21.49      H1   C
ATOM   5115  C   GLY    49      -7.929  20.562 -35.502  1.00 22.86      H1   C
ATOM   5116  O   GLY    49      -8.258  21.733 -35.679  1.00 22.27      H1   O
ATOM   5117  N   GLU    50      -7.166  20.164 -34.490  1.00 22.34      H1   N
ATOM   5118  CA  GLU    50      -6.673  21.078 -33.469  1.00 23.19      H1   C
ATOM   5119  CB  GLU    50      -7.577  21.023 -32.234  1.00 23.22      H1   C
ATOM   5120  CG  GLU    50      -7.510  19.674 -31.530  1.00 20.57      H1   C
ATOM   5121  CD  GLU    50      -8.512  19.538 -30.396  1.00 23.89      H1   C
ATOM   5122  OE1 GLU    50      -9.378  20.428 -30.251  1.00 22.86      H1   O
ATOM   5123  OE2 GLU    50      -8.438  18.533 -29.656  1.00 20.61      H1   O
ATOM   5124  C   GLU    50      -5.257  20.664 -33.053  1.00 25.41      H1   C
ATOM   5125  O   GLU    50      -4.799  19.559 -33.349  1.00 26.68      H1   O
ATOM   5126  N   ILE    51      -4.577  21.549 -32.340  1.00 25.24      H1   N
ATOM   5127  CA  ILE    51      -3.275  21.223 -31.780  1.00 25.42      H1   C
ATOM   5128  CB  ILE    51      -2.151  21.625 -32.768  1.00 25.30      H1   C
ATOM   5129  CG2 ILE    51      -2.110  23.145 -32.919  1.00 20.77      H1   C
ATOM   5130  CG1 ILE    51      -0.805  21.091 -32.288  1.00 25.23      H1   C
ATOM   5131  CD1 ILE    51       0.268  21.133 -33.364  1.00 26.63      H1   C
ATOM   5132  C   ILE    51      -3.150  22.023 -30.492  1.00 25.89      H1   C
ATOM   5133  O   ILE    51      -3.846  23.019 -30.318  1.00 25.01      H1   O
ATOM   5134  N   ASN    52      -2.294  21.585 -29.575  1.00 27.77      H1   N
ATOM   5135  CA  ASN    52      -1.924  22.442 -28.456  1.00 28.51      H1   C
ATOM   5136  CB  ASN    52      -2.366  21.828 -27.119  1.00 31.18      H1   C
ATOM   5137  CG  ASN    52      -1.642  20.539 -26.785  1.00 33.23      H1   C
ATOM   5138  OD1 ASN    52      -0.514  20.307 -27.221  1.00 37.24      H1   O
ATOM   5139  ND2 ASN    52      -2.294  19.688 -25.999  1.00 34.97      H1   N
ATOM   5140  C   ASN    52      -0.423  22.706 -28.463  1.00 29.67      H1   C
ATOM   5141  O   ASN    52       0.293  22.205 -29.327  1.00 29.70      H1   O
ATOM   5142  N   HIS    53       0.047  23.497 -27.505  1.00 30.65      H1   N
ATOM   5143  CA  HIS    53       1.391  24.059 -27.565  1.00 34.02      H1   C
ATOM   5144  CB  HIS    53       1.597  25.058 -26.431  1.00 36.59      H1   C
ATOM   5145  CG  HIS    53       1.574  24.427 -25.077  1.00 41.39      H1   C
ATOM   5146  CD2 HIS    53       0.542  24.090 -24.268  1.00 42.73      H1   C
ATOM   5147  ND1 HIS    53       2.719  24.025 -24.425  1.00 44.09      H1   N
ATOM   5148  CE1 HIS    53       2.393  23.465 -23.273  1.00 43.74      H1   C
ATOM   5149  NE2 HIS    53       1.077  23.492 -23.154  1.00 44.27      H1   N
ATOM   5150  C   HIS    53       2.473  22.990 -27.475  1.00 34.37      H1   C
ATOM   5151  O   HIS    53       3.621  23.241 -27.819  1.00 34.24      H1   O
ATOM   5152  N   SER    54       2.115  21.805 -26.999  1.00 34.17      H1   N
ATOM   5153  CA  SER    54       3.103  20.752 -26.852  1.00 34.95      H1   C
ATOM   5154  CB  SER    54       2.728  19.819 -25.708  1.00 37.13      H1   C
ATOM   5155  OG  SER    54       1.673  18.955 -26.090  1.00 44.66      H1   O
ATOM   5156  C   SER    54       3.207  19.960 -28.140  1.00 35.47      H1   C
ATOM   5157  O   SER    54       4.033  19.058 -28.255  1.00 37.27      H1   O
ATOM   5158  N   GLY    55       2.360  20.291 -29.110  1.00 33.32      H1   N
ATOM   5159  CA  GLY    55       2.456  19.646 -30.407  1.00 33.10      H1   C
ATOM   5160  C   GLY    55       1.537  18.459 -30.649  1.00 30.70      H1   C
ATOM   5161  O   GLY    55       1.519  17.913 -31.744  1.00 31.90      H1   O
ATOM   5162  N   ARG    56       0.770  18.047 -29.647  1.00 31.34      H1   N
ATOM   5163  CA  ARG    56      -0.181  16.959 -29.860  1.00 31.52      H1   C
ATOM   5164  CB  ARG    56      -0.674  16.399 -28.520  1.00 33.02      H1   C
ATOM   5165  CG  ARG    56      -1.671  15.245 -28.675  1.00 39.22      H1   C
ATOM   5166  CD  ARG    56      -1.844  14.428 -27.393  1.00 41.40      H1   C
ATOM   5167  NE  ARG    56      -2.188  15.260 -26.239  1.00 44.28      H1   N
ATOM   5168  CZ  ARG    56      -3.363  15.858 -26.069  1.00 45.93      H1   C
ATOM   5169  NH1 ARG    56      -4.318  15.722 -26.983  1.00 45.10      H1   N
ATOM   5170  NH2 ARG    56      -3.584  16.588 -24.980  1.00 46.47      H1   N
ATOM   5171  C   ARG    56      -1.376  17.427 -30.702  1.00 29.42      H1   C
ATOM   5172  O   ARG    56      -1.861  18.544 -30.547  1.00 29.24      H1   O
ATOM   5173  N   THR    57      -1.844  16.560 -31.590  1.00 27.46      H1   N
ATOM   5174  CA  THR    57      -2.908  16.912 -32.518  1.00 28.02      H1   C
ATOM   5175  CB  THR    57      -2.401  16.915 -33.974  1.00 26.99      H1   C
ATOM   5176  OG1 THR    57      -1.806  15.646 -34.267  1.00 28.13      H1   O
ATOM   5177  CG2 THR    57      -1.384  18.032 -34.194  1.00 24.99      H1   C
ATOM   5178  C   THR    57      -4.097  15.956 -32.442  1.00 27.51      H1   C
ATOM   5179  O   THR    57      -3.968  14.814 -31.996  1.00 24.38      H1   O
ATOM   5180  N   ASP    58      -5.252  16.447 -32.882  1.00 26.49      H1   N
ATOM   5181  CA  ASP    58      -6.422  15.606 -33.141  1.00 26.22      H1   C
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ATOM   5182  CB  ASP    58      -7.491  15.830 -32.064  1.00 26.18      H1   C
ATOM   5183  CG  ASP    58      -6.973  15.585 -30.655  1.00 25.96      H1   C
ATOM   5184  OD1 ASP    58      -6.604  14.436 -30.349  1.00 28.58      H1   O
ATOM   5185  OD2 ASP    58      -6.941  16.538 -29.849  1.00 25.89      H1   O
ATOM   5186  C   ASP    58      -6.985  16.012 -34.506  1.00 25.72      H1   C
ATOM   5187  O   ASP    58      -7.107  17.200 -34.795  1.00 24.91      H1   O
ATOM   5188  N   TYR    59      -7.326  15.035 -35.339  1.00 25.29      H1   N
ATOM   5189  CA  TYR    59      -7.818  15.326 -36.681  1.00 25.55      H1   C
ATOM   5190  CB  TYR    59      -6.882  14.740 -37.743  1.00 24.54      H1   C
ATOM   5191  CG  TYR    59      -5.476  15.296 -37.709  1.00 27.17      H1   C
ATOM   5192  CD1 TYR    59      -5.247  16.653 -37.827  1.00 25.11      H1   C
ATOM   5193  CE1 TYR    59      -3.971  17.167 -37.782  1.00 28.62      H1   C
ATOM   5194  CD2 TYR    59      -4.378  14.458 -37.550  1.00 28.77      H1   C
ATOM   5195  CE2 TYR    59      -3.091  14.966 -37.510  1.00 29.01      H1   C
ATOM   5196  CZ  TYR    59      -2.895  16.324 -37.622  1.00 28.28      H1   C
ATOM   5197  OH  TYR    59      -1.624  16.855 -37.546  1.00 29.69      H1   O
ATOM   5198  C   TYR    59      -9.217  14.774 -36.912  1.00 26.93      H1   C
ATOM   5199  O   TYR    59      -9.610  13.775 -36.306  1.00 25.54      H1   O
ATOM   5200  N   ASN    60      -9.960  15.435 -37.795  1.00 25.64      H1   N
ATOM   5201  CA  ASN    60     -11.180  14.866 -38.339  1.00 27.20      H1   C
ATOM   5202  CB  ASN    60     -11.914  15.908 -39.193  1.00 27.87      H1   C
ATOM   5203  CG  ASN    60     -13.295  15.439 -39.636  1.00 29.92      H1   C
ATOM   5204  OD1 ASN    60     -13.552  14.242 -39.734  1.00 27.12      H1   O
ATOM   5205  ND2 ASN    60     -14.191  16.388 -39.906  1.00 27.79      H1   N
ATOM   5206  C   ASN    60     -10.766  13.682 -39.211  1.00 28.06      H1   C
ATOM   5207  O   ASN    60      -9.900  13.815 -40.076  1.00 26.75      H1   O
ATOM   5208  N   PRO    61     -11.383  12.509 -38.988  1.00 28.60      H1   N
ATOM   5209  CD  PRO    61     -12.379  12.272 -37.929  1.00 28.36      H1   C
ATOM   5210  CA  PRO    61     -11.103  11.288 -39.750  1.00 28.67      H1   C
ATOM   5211  CB  PRO    61     -12.156  10.300 -39.243  1.00 30.97      H1   C
ATOM   5212  CG  PRO    61     -12.471  10.774 -37.878  1.00 31.87      H1   C
ATOM   5213  C   PRO    61     -11.199  11.489 -41.254  1.00 29.49      H1   C
ATOM   5214  O   PRO    61     -10.505  10.830 -42.016  1.00 30.22      H1   O
ATOM   5215  N   SER    62     -12.064  12.402 -41.682  1.00 29.86      H1   N
ATOM   5216  CA  SER    62     -12.310  12.593 -43.105  1.00 30.55      H1   C
ATOM   5217  CB  SER    62     -13.540  13.472 -43.307  1.00 30.58      H1   C
ATOM   5218  OG  SER    62     -13.283  14.785 -42.854  1.00 31.57      H1   O
ATOM   5219  C   SER    62     -11.117  13.242 -43.799  1.00 31.98      H1   C
ATOM   5220  O   SER    62     -11.054  13.280 -45.026  1.00 32.06      H1   O
ATOM   5221  N   LEU    63     -10.180  13.763 -43.010  1.00 30.93      H1   N
ATOM   5222  CA  LEU    63      -9.039  14.489 -43.558  1.00 31.13      H1   C
ATOM   5223  CB  LEU    63      -9.206  15.987 -43.293  1.00 29.01      H1   C
ATOM   5224  CG  LEU    63     -10.329  16.656 -44.092  1.00 31.66      H1   C
ATOM   5225  CD1 LEU    63     -10.593  18.044 -43.535  1.00 28.33      H1   C
ATOM   5226  CD2 LEU    63      -9.939  16.731 -45.575  1.00 28.56      H1   C
ATOM   5227  C   LEU    63      -7.703  14.006 -42.988  1.00 30.49      H1   C
ATOM   5228  O   LEU    63      -6.640  14.416 -43.451  1.00 30.14      H1   O
ATOM   5229  N   LYS    64      -7.773  13.133 -41.989  1.00 30.11      H1   N
ATOM   5230  CA  LYS    64      -6.602  12.670 -41.257  1.00 32.57      H1   C
ATOM   5231  CB  LYS    64      -7.007  11.514 -40.337  1.00 36.89      H1   C
ATOM   5232  CG  LYS    64      -5.877  10.924 -39.511  1.00 40.28      H1   C
ATOM   5233  CD  LYS    64      -6.349   9.706 -38.706  1.00 44.49      H1   C
ATOM   5234  CE  LYS    64      -6.817  10.078 -37.290  1.00 48.41      H1   C
ATOM   5235  NZ  LYS    64      -8.133  10.801 -37.258  1.00 48.82      H1   N
ATOM   5236  C   LYS    64      -5.443  12.229 -42.153  1.00 34.71      H1   C
ATOM   5237  O   LYS    64      -4.282  12.504 -41.851  1.00 34.00      H1   O
ATOM   5238  N   SER    65      -5.753  11.547 -43.254  1.00 35.63      H1   N
ATOM   5239  CA  SER    65      -4.709  10.978 -44.099  1.00 38.29      H1   C
ATOM   5240  CB  SER    65      -5.299   9.924 -45.043  1.00 39.24      H1   C
ATOM   5241  OG  SER    65      -6.082  10.525 -46.065  1.00 44.72      H1   O
ATOM   5242  C   SER    65      -3.961  12.035 -44.916  1.00 39.01      H1   C
ATOM   5243  O   SER    65      -2.842  11.793 -45.378  1.00 39.10      H1   O
ATOM   5244  N   ARG    66      -4.573  13.204 -45.089  1.00 37.26      H1   N
ATOM   5245  CA  ARG    66      -3.992  14.240 -45.937  1.00 35.64      H1   C
ATOM   5246  CB  ARG    66      -5.018  14.691 -46.983  1.00 34.32      H1   C
ATOM   5247  CG  ARG    66      -5.552  13.575 -47.868  1.00 35.93      H1   C
ATOM   5248  CD  ARG    66      -6.867  13.993 -48.513  1.00 35.14      H1   C
ATOM   5249  NE  ARG    66      -6.689  15.244 -49.224  1.00 34.04      H1   N
ATOM   5250  CZ  ARG    66      -7.614  16.185 -49.375  1.00 32.60      H1   C
ATOM   5251  NH1 ARG    66      -8.833  16.046 -48.867  1.00 24.54      H1   N
ATOM   5252  NH2 ARG    66      -7.296  17.285 -50.040  1.00 30.85      H1   N
ATOM   5253  C   ARG    66      -3.495  15.462 -45.157  1.00 35.29      H1   C
ATOM   5254  O   ARG    66      -2.810  16.320 -45.713  1.00 36.20      H1   O
ATOM   5255  N   VAL    67      -3.848  15.549 -43.878  1.00 33.06      H1   N
ATOM   5256  CA  VAL    67      -3.663  16.787 -43.132  1.00 32.98      H1   C
ATOM   5257  CB  VAL    67      -4.944  17.169 -42.347  1.00 34.24      H1   C
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ATOM	5258	CG1	VAL	67	-4.725	18.471	-41.600	1.00	36.90	H1	C
ATOM	5259	CG2	VAL	67	-6.107	17.326	-43.297	1.00	38.06	H1	C
ATOM	5260	C	VAL	67	-2.513	16.725	-42.137	1.00	30.38	H1	C
ATOM	5261	O	VAL	67	-2.260	15.693	-41.525	1.00	29.73	H1	O
ATOM	5262	N	THR	68	-1.824	17.847	-41.978	1.00	29.72	H1	N
ATOM	5263	CA	THR	68	-0.890	18.021	-40.878	1.00	31.21	H1	C
ATOM	5264	CB	THR	68	0.581	17.868	-41.333	1.00	32.80	H1	C
ATOM	5265	OG1	THR	68	0.773	16.575	-41.917	1.00	36.87	H1	O
ATOM	5266	CG2	THR	68	1.521	18.003	-40.141	1.00	33.68	H1	C
ATOM	5267	C	THR	68	-1.067	19.413	-40.291	1.00	31.32	H1	C
ATOM	5268	O	THR	68	-1.042	20.420	-41.011	1.00	31.21	H1	O
ATOM	5269	N	ILE	69	-1.255	19.466	-38.980	1.00	27.82	H1	N
ATOM	5270	CA	ILE	69	-1.280	20.733	-38.274	1.00	26.11	H1	C
ATOM	5271	CB	ILE	69	-2.548	20.844	-37.404	1.00	22.50	H1	C
ATOM	5272	CG2	ILE	69	-2.490	22.088	-36.539	1.00	21.71	H1	C
ATOM	5273	CG1	ILE	69	-3.786	20.862	-38.309	1.00	22.12	H1	C
ATOM	5274	CD1	ILE	69	-5.111	20.739	-37.559	1.00	19.06	H1	C
ATOM	5275	C	ILE	69	-0.034	20.796	-37.399	1.00	26.90	H1	C
ATOM	5276	O	ILE	69	0.344	19.808	-36.763	1.00	26.17	H1	O
ATOM	5277	N	SER	70	0.620	21.950	-37.386	1.00	26.96	H1	N
ATOM	5278	CA	SER	70	1.825	22.112	-36.590	1.00	29.41	H1	C
ATOM	5279	CB	SER	70	3.066	22.082	-37.490	1.00	29.33	H1	C
ATOM	5280	OG	SER	70	2.970	23.059	-38.508	1.00	34.80	H1	O
ATOM	5281	C	SER	70	1.753	23.419	-35.829	1.00	29.15	H1	C
ATOM	5282	O	SER	70	0.891	24.257	-36.096	1.00	29.52	H1	O
ATOM	5283	N	VAL	71	2.647	23.588	-34.864	1.00	30.15	H1	N
ATOM	5284	CA	VAL	71	2.617	24.776	-34.029	1.00	30.65	H1	C
ATOM	5285	CB	VAL	71	1.970	24.461	-32.653	1.00	30.44	H1	C
ATOM	5286	CG1	VAL	71	2.819	23.450	-31.900	1.00	28.16	H1	C
ATOM	5287	CG2	VAL	71	1.804	25.744	-31.842	1.00	32.12	H1	C
ATOM	5288	C	VAL	71	4.026	25.320	-33.813	1.00	31.95	H1	C
ATOM	5289	O	VAL	71	4.994	24.564	-33.722	1.00	30.74	H1	O
ATOM	5290	N	ASP	72	4.134	26.639	-33.743	1.00	33.49	H1	N
ATOM	5291	CA	ASP	72	5.392	27.289	-33.405	1.00	35.48	H1	C
ATOM	5292	CB	ASP	72	5.876	28.143	-34.582	1.00	38.44	H1	C
ATOM	5293	CG	ASP	72	7.211	28.814	-34.310	1.00	40.69	H1	C
ATOM	5294	OD1	ASP	72	7.609	28.903	-33.131	1.00	41.96	H1	O
ATOM	5295	OD2	ASP	72	7.865	29.252	-35.279	1.00	43.43	H1	O
ATOM	5296	C	ASP	72	5.139	28.165	-32.187	1.00	35.14	H1	C
ATOM	5297	O	ASP	72	4.727	29.317	-32.316	1.00	33.42	H1	O
ATOM	5298	N	THR	73	5.376	27.614	-31.002	1.00	36.86	H1	N
ATOM	5299	CA	THR	73	5.012	28.306	-29.774	1.00	40.27	H1	C
ATOM	5300	CB	THR	73	5.158	27.390	-28.545	1.00	41.47	H1	C
ATOM	5301	OG1	THR	73	6.539	27.065	-28.356	1.00	44.90	H1	O
ATOM	5302	CG2	THR	73	4.360	26.103	-28.740	1.00	38.24	H1	C
ATOM	5303	C	THR	73	5.877	29.541	-29.569	1.00	40.62	H1	C
ATOM	5304	O	THR	73	5.410	30.547	-29.039	1.00	41.80	H1	O
ATOM	5305	N	SER	74	7.133	29.475	-29.998	1.00	41.71	H1	N
ATOM	5306	CA	SER	74	8.024	30.617	-29.833	1.00	42.42	H1	C
ATOM	5307	CB	SER	74	9.418	30.313	-30.403	1.00	42.23	H1	C
ATOM	5308	OG	SER	74	9.455	30.467	-31.811	1.00	45.59	H1	O
ATOM	5309	C	SER	74	7.423	31.820	-30.542	1.00	41.31	H1	C
ATOM	5310	O	SER	74	7.602	32.959	-30.111	1.00	43.56	H1	O
ATOM	5311	N	LYS	75	6.692	31.562	-31.622	1.00	40.07	H1	N
ATOM	5312	CA	LYS	75	6.081	32.635	-32.402	1.00	37.23	H1	C
ATOM	5313	CB	LYS	75	6.283	32.381	-33.894	1.00	40.70	H1	C
ATOM	5314	CG	LYS	75	7.640	32.786	-34.430	1.00	42.41	H1	C
ATOM	5315	CD	LYS	75	7.552	33.046	-35.925	1.00	45.61	H1	C
ATOM	5316	CE	LYS	75	8.933	33.131	-36.550	1.00	48.78	H1	C
ATOM	5317	NZ	LYS	75	9.706	31.882	-36.306	1.00	49.50	H1	N
ATOM	5318	C	LYS	75	4.591	32.813	-32.129	1.00	34.20	H1	C
ATOM	5319	O	LYS	75	3.958	33.725	-32.673	1.00	31.98	H1	O
ATOM	5320	N	LYS	76	4.031	31.939	-31.298	1.00	31.53	H1	N
ATOM	5321	CA	LYS	76	2.583	31.894	-31.099	1.00	30.16	H1	C
ATOM	5322	CB	LYS	76	2.129	33.120	-30.301	1.00	31.13	H1	C
ATOM	5323	CG	LYS	76	2.773	33.203	-28.914	1.00	32.98	H1	C
ATOM	5324	CD	LYS	76	2.476	34.526	-28.236	1.00	35.35	H1	C
ATOM	5325	CE	LYS	76	3.315	34.711	-26.976	1.00	42.53	H1	C
ATOM	5326	NZ	LYS	76	3.033	33.680	-25.934	1.00	45.06	H1	N
ATOM	5327	C	LYS	76	1.867	31.830	-32.451	1.00	28.30	H1	C
ATOM	5328	O	LYS	76	1.027	32.664	-32.773	1.00	26.79	H1	O
ATOM	5329	N	GLN	77	2.234	30.837	-33.248	1.00	28.03	H1	N
ATOM	5330	CA	GLN	77	1.610	30.613	-34.544	1.00	30.21	H1	C
ATOM	5331	CB	GLN	77	2.528	31.065	-35.685	1.00	29.25	H1	C
ATOM	5332	CG	GLN	77	2.730	32.565	-35.778	1.00	32.24	H1	C
ATOM	5333	CD	GLN	77	3.757	32.963	-36.834	1.00	31.77	H1	C

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ATOM   5334  OE1 GLN   77       4.144  34.126 -36.922  1.00 35.74      H1   O
ATOM   5335  NE2 GLN   77       4.198  32.002 -37.634  1.00 28.74      H1   N
ATOM   5336  C   GLN   77       1.353  29.124 -34.680  1.00 29.69      H1   C
ATOM   5337  O   GLN   77       2.085  28.307 -34.119  1.00 31.84      H1   O
ATOM   5338  N   PHE   78       0.313  28.767 -35.417  1.00 28.53      H1   N
ATOM   5339  CA  PHE   78       0.149  27.385 -35.817  1.00 28.21      H1   C
ATOM   5340  CB  PHE   78      -0.842  26.658 -34.888  1.00 28.77      H1   C
ATOM   5341  CG  PHE   78      -2.240  27.200 -34.928  1.00 28.71      H1   C
ATOM   5342  CD1 PHE   78      -3.272  26.444 -35.469  1.00 28.64      H1   C
ATOM   5343  CD2 PHE   78      -2.531  28.452 -34.412  1.00 28.33      H1   C
ATOM   5344  CE1 PHE   78      -4.568  26.928 -35.494  1.00 28.19      H1   C
ATOM   5345  CE2 PHE   78      -3.824  28.941 -34.434  1.00 28.05      H1   C
ATOM   5346  CZ  PHE   78      -4.844  28.177 -34.978  1.00 27.78      H1   C
ATOM   5347  C   PHE   78      -0.291  27.334 -37.267  1.00 26.74      H1   C
ATOM   5348  O   PHE   78      -0.746  28.329 -37.820  1.00 26.40      H1   O
ATOM   5349  N   SER   79      -0.121  26.173 -37.884  1.00 26.74      H1   N
ATOM   5350  CA  SER   79      -0.190  26.058 -39.332  1.00 28.66      H1   C
ATOM   5351  CB  SER   79       1.217  25.906 -39.911  1.00 26.94      H1   C
ATOM   5352  OG  SER   79       1.991  27.059 -39.670  1.00 37.18      H1   O
ATOM   5353  C   SER   79      -1.019  24.857 -39.751  1.00 27.22      H1   C
ATOM   5354  O   SER   79      -1.198  23.915 -38.982  1.00 28.89      H1   O
ATOM   5355  N   LEU   80      -1.492  24.899 -40.988  1.00 28.24      H1   N
ATOM   5356  CA  LEU   80      -2.221  23.797 -41.595  1.00 28.21      H1   C
ATOM   5357  CB  LEU   80      -3.657  24.228 -41.873  1.00 27.82      H1   C
ATOM   5358  CG  LEU   80      -4.499  23.249 -42.689  1.00 29.21      H1   C
ATOM   5359  CD1 LEU   80      -4.684  21.959 -41.906  1.00 25.31      H1   C
ATOM   5360  CD2 LEU   80      -5.843  23.888 -43.000  1.00 29.81      H1   C
ATOM   5361  C   LEU   80      -1.560  23.383 -42.910  1.00 29.34      H1   C
ATOM   5362  O   LEU   80      -1.283  24.224 -43.764  1.00 29.99      H1   O
ATOM   5363  N   LYS   81      -1.315  22.088 -43.072  1.00 30.34      H1   N
ATOM   5364  CA  LYS   81      -0.952  21.543 -44.372  1.00 32.50      H1   C
ATOM   5365  CB  LYS   81       0.433  20.888 -44.315  1.00 36.42      H1   C
ATOM   5366  CG  LYS   81       1.585  21.867 -44.454  1.00 43.74      H1   C
ATOM   5367  CD  LYS   81       2.892  21.145 -44.778  1.00 47.76      H1   C
ATOM   5368  CE  LYS   81       3.901  22.096 -45.405  1.00 48.81      H1   C
ATOM   5369  NZ  LYS   81       3.752  23.471 -44.859  1.00 49.14      H1   N
ATOM   5370  C   LYS   81      -1.976  20.514 -44.830  1.00 32.18      H1   C
ATOM   5371  O   LYS   81      -2.286  19.568 -44.102  1.00 32.47      H1   O
ATOM   5372  N   LEU   82      -2.493  20.694 -46.041  1.00 31.45      H1   N
ATOM   5373  CA  LEU   82      -3.388  19.708 -46.642  1.00 31.74      H1   C
ATOM   5374  CB  LEU   82      -4.777  20.322 -46.853  1.00 29.16      H1   C
ATOM   5375  CG  LEU   82      -5.901  19.419 -47.374  1.00 29.44      H1   C
ATOM   5376  CD1 LEU   82      -6.172  18.295 -46.380  1.00 26.17      H1   C
ATOM   5377  CD2 LEU   82      -7.163  20.251 -47.579  1.00 27.84      H1   C
ATOM   5378  C   LEU   82      -2.815  19.252 -47.980  1.00 31.38      H1   C
ATOM   5379  O   LEU   82      -2.719  20.049 -48.913  1.00 30.59      H1   O
ATOM   5380  N   ASN   83      -2.439  17.976 -48.068  1.00 33.35      H1   N
ATOM   5381  CA  ASN   83      -1.862  17.403 -49.294  1.00 34.64      H1   C
ATOM   5382  CB  ASN   83      -1.143  16.079 -48.999  1.00 37.82      H1   C
ATOM   5383  CG  ASN   83      -0.053  16.223 -47.975  1.00 43.06      H1   C
ATOM   5384  OD1 ASN   83       0.637  17.244 -47.924  1.00 45.32      H1   O
ATOM   5385  ND2 ASN   83       0.114  15.198 -47.141  1.00 42.01      H1   N
ATOM   5386  C   ASN   83      -2.907  17.112 -50.368  1.00 34.00      H1   C
ATOM   5387  O   ASN   83      -4.092  16.917 -50.066  1.00 31.80      H1   O
ATOM   5388  N   SER   84      -2.437  17.067 -51.616  1.00 32.98      H1   N
ATOM   5389  CA  SER   84      -3.175  16.485 -52.733  1.00 32.51      H1   C
ATOM   5390  CB  SER   84      -3.226  14.963 -52.596  1.00 33.13      H1   C
ATOM   5391  OG  SER   84      -1.930  14.422 -52.419  1.00 37.34      H1   O
ATOM   5392  C   SER   84      -4.594  17.013 -52.848  1.00 32.10      H1   C
ATOM   5393  O   SER   84      -5.544  16.235 -52.918  1.00 32.45      H1   O
ATOM   5394  N   VAL   85      -4.737  18.331 -52.870  1.00 30.78      H1   N
ATOM   5395  CA  VAL   85      -6.054  18.939 -52.891  1.00 31.67      H1   C
ATOM   5396  CB  VAL   85      -5.955  20.468 -52.767  1.00 31.43      H1   C
ATOM   5397  CG1 VAL   85      -5.392  20.841 -51.400  1.00 31.90      H1   C
ATOM   5398  CG2 VAL   85      -5.072  21.019 -53.869  1.00 31.67      H1   C
ATOM   5399  C   VAL   85      -6.815  18.589 -54.164  1.00 32.60      H1   C
ATOM   5400  O   VAL   85      -6.214  18.241 -55.180  1.00 34.22      H1   O
ATOM   5401  N   THR   86      -8.142  18.659 -54.090  1.00 31.22      H1   N
ATOM   5402  CA  THR   86      -8.995  18.603 -55.275  1.00 31.00      H1   C
ATOM   5403  CB  THR   86      -9.725  17.249 -55.400  1.00 31.98      H1   C
ATOM   5404  OG1 THR   86     -10.653  17.102 -54.316  1.00 34.46      H1   O
ATOM   5405  CG2 THR   86      -8.725  16.091 -55.368  1.00 32.26      H1   C
ATOM   5406  C   THR   86     -10.038  19.709 -55.152  1.00 30.48      H1   C
ATOM   5407  O   THR   86     -10.059  20.439 -54.162  1.00 30.01      H1   O
ATOM   5408  N   ALA   87     -10.904  19.836 -56.150  1.00 28.60      H1   N
ATOM   5409  CA  ALA   87     -11.891  20.908 -56.145  1.00 29.42      H1   C
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ATOM   5410  CB  ALA    87     -12.797  20.806 -57.386  1.00 25.14      H1   C
ATOM   5411  C   ALA    87     -12.734  20.876 -54.871  1.00 27.88      H1   C
ATOM   5412  O   ALA    87     -13.204  21.908 -54.415  1.00 29.57      H1   O
ATOM   5413  N   ALA    88     -12.915  19.689 -54.301  1.00 26.65      H1   N
ATOM   5414  CA  ALA    88     -13.753  19.515 -53.115  1.00 26.47      H1   C
ATOM   5415  CB  ALA    88     -14.045  18.023 -52.907  1.00 22.83      H1   C
ATOM   5416  C   ALA    88     -13.147  20.115 -51.834  1.00 27.55      H1   C
ATOM   5417  O   ALA    88     -13.818  20.204 -50.800  1.00 25.90      H1   O
ATOM   5418  N   ASP    89     -11.879  20.514 -51.896  1.00 26.38      H1   N
ATOM   5419  CA  ASP    89     -11.249  21.202 -50.773  1.00 26.18      H1   C
ATOM   5420  CB  ASP    89      -9.752  20.899 -50.735  1.00 24.35      H1   C
ATOM   5421  CG  ASP    89      -9.462  19.433 -50.473  1.00 25.95      H1   C
ATOM   5422  OD1 ASP    89      -9.997  18.882 -49.486  1.00 26.03      H1   O
ATOM   5423  OD2 ASP    89      -8.704  18.831 -51.262  1.00 25.18      H1   O
ATOM   5424  C   ASP    89     -11.461  22.712 -50.844  1.00 25.45      H1   C
ATOM   5425  O   ASP    89     -11.031  23.446 -49.960  1.00 25.56      H1   O
ATOM   5426  N   THR    90     -12.124  23.169 -51.901  1.00 24.03      H1   N
ATOM   5427  CA  THR    90     -12.500  24.572 -52.021  1.00 22.80      H1   C
ATOM   5428  CB  THR    90     -13.279  24.808 -53.327  1.00 23.31      H1   C
ATOM   5429  OG1 THR    90     -12.440  24.464 -54.434  1.00 23.59      H1   O
ATOM   5430  CG2 THR    90     -13.720  26.278 -53.458  1.00 22.37      H1   C
ATOM   5431  C   THR    90     -13.363  24.994 -50.833  1.00 23.24      H1   C
ATOM   5432  O   THR    90     -14.360  24.342 -50.512  1.00 23.24      H1   O
ATOM   5433  N   ALA    91     -12.975  26.083 -50.178  1.00 22.25      H1   N
ATOM   5434  CA  ALA    91     -13.673  26.534 -48.978  1.00 22.73      H1   C
ATOM   5435  CB  ALA    91     -13.718  25.406 -47.943  1.00 18.43      H1   C
ATOM   5436  C   ALA    91     -12.982  27.757 -48.378  1.00 24.17      H1   C
ATOM   5437  O   ALA    91     -11.855  28.094 -48.755  1.00 25.58      H1   O
ATOM   5438  N   VAL    92     -13.663  28.420 -47.447  1.00 23.43      H1   N
ATOM   5439  CA  VAL    92     -13.002  29.380 -46.575  1.00 23.10      H1   C
ATOM   5440  CB  VAL    92     -13.983  30.477 -46.087  1.00 24.14      H1   C
ATOM   5441  CG1 VAL    92     -13.263  31.430 -45.147  1.00 23.43      H1   C
ATOM   5442  CG2 VAL    92     -14.535  31.260 -47.281  1.00 23.45      H1   C
ATOM   5443  C   VAL    92     -12.436  28.627 -45.372  1.00 24.98      H1   C
ATOM   5444  O   VAL    92     -13.160  27.903 -44.675  1.00 26.01      H1   O
ATOM   5445  N   TYR    93     -11.137  28.779 -45.143  1.00 23.58      H1   N
ATOM   5446  CA  TYR    93     -10.479  28.124 -44.019  1.00 23.55      H1   C
ATOM   5447  CB  TYR    93      -9.135  27.537 -44.471  1.00 20.25      H1   C
ATOM   5448  CG  TYR    93      -9.272  26.302 -45.342  1.00 20.65      H1   C
ATOM   5449  CD1 TYR    93      -8.895  25.048 -44.871  1.00 19.71      H1   C
ATOM   5450  CE1 TYR    93      -9.047  23.911 -45.651  1.00 20.45      H1   C
ATOM   5451  CD2 TYR    93      -9.804  26.385 -46.620  1.00 21.99      H1   C
ATOM   5452  CE2 TYR    93      -9.964  25.250 -47.412  1.00 21.69      H1   C
ATOM   5453  CZ  TYR    93      -9.583  24.020 -46.918  1.00 21.47      H1   C
ATOM   5454  OH  TYR    93      -9.757  22.894 -47.687  1.00 24.56      H1   O
ATOM   5455  C   TYR    93     -10.263  29.110 -42.869  1.00 24.76      H1   C
ATOM   5456  O   TYR    93      -9.700  30.190 -43.064  1.00 26.10      H1   O
ATOM   5457  N   TYR    94     -10.719  28.735 -41.676  1.00 22.97      H1   N
ATOM   5458  CA  TYR    94     -10.583  29.576 -40.489  1.00 23.93      H1   C
ATOM   5459  CB  TYR    94     -11.946  29.821 -39.846  1.00 22.58      H1   C
ATOM   5460  CG  TYR    94     -12.952  30.548 -40.702  1.00 25.89      H1   C
ATOM   5461  CD1 TYR    94     -12.938  31.936 -40.801  1.00 25.89      H1   C
ATOM   5462  CE1 TYR    94     -13.908  32.614 -41.531  1.00 25.38      H1   C
ATOM   5463  CD2 TYR    94     -13.962  29.850 -41.365  1.00 26.81      H1   C
ATOM   5464  CE2 TYR    94     -14.935  30.516 -42.095  1.00 25.75      H1   C
ATOM   5465  CZ  TYR    94     -14.906  31.897 -42.172  1.00 27.48      H1   C
ATOM   5466  OH  TYR    94     -15.889  32.561 -42.874  1.00 28.03      H1   O
ATOM   5467  C   TYR    94      -9.691  28.908 -39.446  1.00 24.14      H1   C
ATOM   5468  O   TYR    94      -9.695  27.681 -39.310  1.00 22.75      H1   O
ATOM   5469  N   CYS    95      -8.938  29.716 -38.705  1.00 24.10      H1   N
ATOM   5470  CA  CYS    95      -8.466  29.294 -37.395  1.00 25.55      H1   C
ATOM   5471  C   CYS    95      -9.410  29.829 -36.338  1.00 25.49      H1   C
ATOM   5472  O   CYS    95     -10.104  30.819 -36.560  1.00 24.75      H1   O
ATOM   5473  CB  CYS    95      -7.034  29.781 -37.107  1.00 27.36      H1   C
ATOM   5474  SG  CYS    95      -6.561  31.491 -37.539  1.00 31.48      H1   S
ATOM   5475  N   ALA    96      -9.439  29.157 -35.192  1.00 24.09      H1   N
ATOM   5476  CA  ALA    96     -10.354  29.504 -34.117  1.00 22.01      H1   C
ATOM   5477  CB  ALA    96     -11.730  28.887 -34.380  1.00 20.76      H1   C
ATOM   5478  C   ALA    96      -9.782  28.977 -32.813  1.00 22.32      H1   C
ATOM   5479  O   ALA    96      -9.166  27.910 -32.775  1.00 22.28      H1   O
ATOM   5480  N   ARG    97      -9.997  29.723 -31.739  1.00 22.97      H1   N
ATOM   5481  CA  ARG    97      -9.439  29.355 -30.450  1.00 22.39      H1   C
ATOM   5482  CB  ARG    97      -9.076  30.614 -29.668  1.00 22.09      H1   C
ATOM   5483  CG  ARG    97      -8.510  30.352 -28.276  1.00 21.83      H1   C
ATOM   5484  CD  ARG    97      -8.172  31.672 -27.581  1.00 23.69      H1   C
ATOM   5485  NE  ARG    97      -9.342  32.258 -26.927  1.00 23.06      H1   N
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ATOM   5486  CZ  ARG    97      -9.273  33.201 -25.993  1.00 26.31      H1   C
ATOM   5487  NH1 ARG    97      -8.090  33.668 -25.613  1.00 26.46      H1   N
ATOM   5488  NH2 ARG    97     -10.379  33.662 -25.422  1.00 23.30      H1   N
ATOM   5489  C   ARG    97     -10.426  28.533 -29.636  1.00 24.53      H1   C
ATOM   5490  O   ARG    97     -11.632  28.801 -29.658  1.00 22.12      H1   O
ATOM   5491  N   GLY    98      -9.905  27.537 -28.921  1.00 22.25      H1   N
ATOM   5492  CA  GLY    98     -10.606  27.020 -27.760  1.00 23.81      H1   C
ATOM   5493  C   GLY    98     -11.259  25.658 -27.913  1.00 23.68      H1   C
ATOM   5494  O   GLY    98     -11.391  25.128 -29.023  1.00 23.49      H1   O
ATOM   5495  N   GLN    99     -11.668  25.095 -26.780  1.00 22.67      H1   N
ATOM   5496  CA  GLN    99     -12.293  23.780 -26.749  1.00 23.45      H1   C
ATOM   5497  CB  GLN    99     -11.253  22.706 -26.419  1.00 22.97      H1   C
ATOM   5498  CG  GLN    99     -11.774  21.269 -26.560  1.00 20.76      H1   C
ATOM   5499  CD  GLN    99     -10.690  20.232 -26.328  1.00 22.06      H1   C
ATOM   5500  OE1 GLN    99     -10.482  19.768 -25.202  1.00 22.02      H1   O
ATOM   5501  NE2 GLN    99      -9.992  19.860 -27.395  1.00 21.38      H1   N
ATOM   5502  C   GLN    99     -13.436  23.724 -25.725  1.00 24.22      H1   C
ATOM   5503  O   GLN    99     -14.550  23.329 -26.056  1.00 24.28      H1   O
ATOM   5504  N   LEU   100     -13.161  24.117 -24.485  1.00 23.64      H1   N
ATOM   5505  CA  LEU   100     -14.182  24.086 -23.448  1.00 24.07      H1   C
ATOM   5506  CB  LEU   100     -13.543  24.137 -22.055  1.00 23.74      H1   C
ATOM   5507  CG  LEU   100     -12.653  22.935 -21.697  1.00 23.65      H1   C
ATOM   5508  CD1 LEU   100     -12.218  23.039 -20.250  1.00 21.96      H1   C
ATOM   5509  CD2 LEU   100     -13.409  21.629 -21.918  1.00 22.57      H1   C
ATOM   5510  C   LEU   100     -15.133  25.257 -23.642  1.00 26.71      H1   C
ATOM   5511  O   LEU   100     -16.334  25.145 -23.386  1.00 27.08      H1   O
ATOM   5512  N   VAL   101     -14.591  26.380 -24.104  1.00 26.05      H1   N
ATOM   5513  CA  VAL   101     -15.413  27.446 -24.665  1.00 26.77      H1   C
ATOM   5514  CB  VAL   101     -15.146  28.799 -23.957  1.00 25.01      H1   C
ATOM   5515  CG1 VAL   101     -16.083  29.869 -24.501  1.00 25.38      H1   C
ATOM   5516  CG2 VAL   101     -15.361  28.646 -22.453  1.00 24.75      H1   C
ATOM   5517  C   VAL   101     -15.034  27.530 -26.141  1.00 26.59      H1   C
ATOM   5518  O   VAL   101     -14.149  28.290 -26.528  1.00 26.80      H1   O
ATOM   5519  N   PRO   102     -15.687  26.710 -26.980  1.00 25.65      H1   N
ATOM   5520  CD  PRO   102     -16.834  25.848 -26.646  1.00 23.49      H1   C
ATOM   5521  CA  PRO   102     -15.148  26.427 -28.315  1.00 23.89      H1   C
ATOM   5522  CB  PRO   102     -15.863  25.141 -28.729  1.00 23.18      H1   C
ATOM   5523  CG  PRO   102     -17.147  25.158 -27.954  1.00 25.40      H1   C
ATOM   5524  C   PRO   102     -15.315  27.542 -29.339  1.00 24.72      H1   C
ATOM   5525  O   PRO   102     -16.411  28.061 -29.550  1.00 24.05      H1   O
ATOM   5526  N   PHE   103     -14.206  27.900 -29.974  1.00 22.69      H1   N
ATOM   5527  CA  PHE   103     -14.223  28.841 -31.080  1.00 22.97      H1   C
ATOM   5528  CB  PHE   103     -15.059  28.262 -32.240  1.00 20.62      H1   C
ATOM   5529  CG  PHE   103     -14.912  26.755 -32.412  1.00 21.68      H1   C
ATOM   5530  CD1 PHE   103     -16.005  25.970 -32.759  1.00 17.84      H1   C
ATOM   5531  CD2 PHE   103     -13.693  26.125 -32.185  1.00 19.12      H1   C
ATOM   5532  CE1 PHE   103     -15.888  24.595 -32.868  1.00 19.25      H1   C
ATOM   5533  CE2 PHE   103     -13.565  24.745 -32.294  1.00 17.07      H1   C
ATOM   5534  CZ  PHE   103     -14.666  23.978 -32.634  1.00 18.07      H1   C
ATOM   5535  C   PHE   103     -14.781  30.195 -30.619  1.00 23.73      H1   C
ATOM   5536  O   PHE   103     -15.712  30.724 -31.217  1.00 24.85      H1   O
ATOM   5537  N   ASP   104     -14.215  30.752 -29.548  1.00 24.65      H1   N
ATOM   5538  CA  ASP   104     -14.669  32.050 -29.069  1.00 24.76      H1   C
ATOM   5539  CB  ASP   104     -14.406  32.217 -27.563  1.00 25.91      H1   C
ATOM   5540  CG  ASP   104     -12.945  32.005 -27.175  1.00 30.36      H1   C
ATOM   5541  OD1 ASP   104     -12.122  31.635 -28.036  1.00 31.12      H1   O
ATOM   5542  OD2 ASP   104     -12.619  32.212 -25.987  1.00 28.71      H1   O
ATOM   5543  C   ASP   104     -14.021  33.180 -29.856  1.00 27.29      H1   C
ATOM   5544  O   ASP   104     -14.586  34.262 -29.971  1.00 27.52      H1   O
ATOM   5545  N   TYR   105     -12.841  32.920 -30.411  1.00 26.93      H1   N
ATOM   5546  CA  TYR   105     -12.227  33.847 -31.355  1.00 26.35      H1   C
ATOM   5547  CB  TYR   105     -10.971  34.479 -30.743  1.00 25.73      H1   C
ATOM   5548  CG  TYR   105     -11.278  35.498 -29.675  1.00 28.28      H1   C
ATOM   5549  CD1 TYR   105     -11.345  35.133 -28.334  1.00 26.26      H1   C
ATOM   5550  CE1 TYR   105     -11.661  36.060 -27.359  1.00 27.70      H1   C
ATOM   5551  CD2 TYR   105     -11.534  36.825 -30.012  1.00 29.38      H1   C
ATOM   5552  CE2 TYR   105     -11.855  37.756 -29.044  1.00 29.45      H1   C
ATOM   5553  CZ  TYR   105     -11.918  37.368 -27.722  1.00 29.50      H1   C
ATOM   5554  OH  TYR   105     -12.255  38.299 -26.766  1.00 32.67      H1   O
ATOM   5555  C   TYR   105     -11.869  33.131 -32.657  1.00 25.43      H1   C
ATOM   5556  O   TYR   105     -11.426  31.982 -32.641  1.00 24.81      H1   O
ATOM   5557  N   TRP   106     -12.065  33.826 -33.774  1.00 24.15      H1   N
ATOM   5558  CA  TRP   106     -11.831  33.273 -35.106  1.00 25.25      H1   C
ATOM   5559  CB  TRP   106     -13.145  33.160 -35.879  1.00 21.93      H1   C
ATOM   5560  CG  TRP   106     -14.111  32.140 -35.362  1.00 22.83      H1   C
ATOM   5561  CD2 TRP   106     -14.605  30.995 -36.072  1.00 21.41      H1   C
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ATOM   5562  CE2 TRP   106     -15.566  30.379 -35.250  1.00 20.48      H1   C
ATOM   5563  CE3 TRP   106     -14.328  30.437 -37.326  1.00 20.75      H1   C
ATOM   5564  CD1 TRP   106     -14.767  32.164 -34.170  1.00 19.87      H1   C
ATOM   5565  NE1 TRP   106     -15.646  31.112 -34.095  1.00 22.85      H1   N
ATOM   5566  CZ2 TRP   106     -16.258  29.229 -35.637  1.00 20.26      H1   C
ATOM   5567  CZ3 TRP   106     -15.015  29.297 -37.711  1.00 20.27      H1   C
ATOM   5568  CH2 TRP   106     -15.970  28.705 -36.868  1.00 23.31      H1   C
ATOM   5569  C   TRP   106     -10.902  34.181 -35.906  1.00 27.18      H1   C
ATOM   5570  O   TRP   106     -10.923  35.400 -35.741  1.00 26.73      H1   O
ATOM   5571  N   GLY   107     -10.114  33.587 -36.797  1.00 27.12      H1   N
ATOM   5572  CA  GLY   107      -9.418  34.377 -37.797  1.00 27.10      H1   C
ATOM   5573  C   GLY   107     -10.379  34.963 -38.822  1.00 28.57      H1   C
ATOM   5574  O   GLY   107     -11.583  34.686 -38.790  1.00 27.48      H1   O
ATOM   5575  N   GLN   108      -9.852  35.771 -39.737  1.00 28.26      H1   N
ATOM   5576  CA  GLN   108     -10.680  36.424 -40.743  1.00 30.59      H1   C
ATOM   5577  CB  GLN   108      -9.980  37.684 -41.275  1.00 33.27      H1   C
ATOM   5578  CG  GLN   108      -8.939  37.432 -42.371  1.00 36.99      H1   C
ATOM   5579  CD  GLN   108      -7.566  37.046 -41.831  1.00 42.07      H1   C
ATOM   5580  OE1 GLN   108      -7.395  36.782 -40.633  1.00 42.16      H1   O
ATOM   5581  NE2 GLN   108      -6.577  37.012 -42.720  1.00 40.22      H1   N
ATOM   5582  C   GLN   108     -10.976  35.464 -41.895  1.00 30.47      H1   C
ATOM   5583  O   GLN   108     -11.868  35.710 -42.707  1.00 31.09      H1   O
ATOM   5584  N   GLY   109     -10.223  34.369 -41.953  1.00 29.81      H1   N
ATOM   5585  CA  GLY   109     -10.492  33.323 -42.923  1.00 29.09      H1   C
ATOM   5586  C   GLY   109      -9.718  33.498 -44.216  1.00 28.69      H1   C
ATOM   5587  O   GLY   109      -9.425  34.618 -44.619  1.00 28.50      H1   O
ATOM   5588  N   THR   110      -9.386  32.389 -44.866  1.00 28.50      H1   N
ATOM   5589  CA  THR   110      -8.682  32.431 -46.139  1.00 28.41      H1   C
ATOM   5590  CB  THR   110      -7.285  31.793 -46.021  1.00 29.01      H1   C
ATOM   5591  OG1 THR   110      -6.522  32.494 -45.034  1.00 32.03      H1   O
ATOM   5592  CG2 THR   110      -6.554  31.856 -47.356  1.00 29.38      H1   C
ATOM   5593  C   THR   110      -9.476  31.669 -47.193  1.00 29.43      H1   C
ATOM   5594  O   THR   110      -9.712  30.471 -47.053  1.00 27.15      H1   O
ATOM   5595  N   LEU   111      -9.890  32.364 -48.246  1.00 29.78      H1   N
ATOM   5596  CA  LEU   111     -10.616  31.723 -49.328  1.00 29.48      H1   C
ATOM   5597  CB  LEU   111     -11.234  32.766 -50.258  1.00 31.55      H1   C
ATOM   5598  CG  LEU   111     -11.853  32.182 -51.537  1.00 36.06      H1   C
ATOM   5599  CD1 LEU   111     -13.054  31.310 -51.180  1.00 35.44      H1   C
ATOM   5600  CD2 LEU   111     -12.272  33.308 -52.470  1.00 33.87      H1   C
ATOM   5601  C   LEU   111      -9.659  30.839 -50.109  1.00 30.13      H1   C
ATOM   5602  O   LEU   111      -8.661  31.308 -50.664  1.00 30.30      H1   O
ATOM   5603  N   VAL   112      -9.953  29.547 -50.129  1.00 28.78      H1   N
ATOM   5604  CA  VAL   112      -9.134  28.603 -50.862  1.00 27.19      H1   C
ATOM   5605  CB  VAL   112      -8.700  27.434 -49.964  1.00 27.32      H1   C
ATOM   5606  CG1 VAL   112      -7.986  26.383 -50.793  1.00 26.80      H1   C
ATOM   5607  CG2 VAL   112      -7.788  27.951 -48.857  1.00 25.55      H1   C
ATOM   5608  C   VAL   112      -9.934  28.071 -52.039  1.00 28.91      H1   C
ATOM   5609  O   VAL   112     -11.012  27.493 -51.867  1.00 26.37      H1   O
ATOM   5610  N   THR   113      -9.405  28.288 -53.237  1.00 28.59      H1   N
ATOM   5611  CA  THR   113     -10.076  27.865 -54.457  1.00 31.25      H1   C
ATOM   5612  CB  THR   113     -10.365  29.071 -55.379  1.00 30.80      H1   C
ATOM   5613  OG1 THR   113     -11.220  29.992 -54.691  1.00 33.89      H1   O
ATOM   5614  CG2 THR   113     -11.064  28.623 -56.658  1.00 32.74      H1   C
ATOM   5615  C   THR   113      -9.190  26.868 -55.183  1.00 31.51      H1   C
ATOM   5616  O   THR   113      -8.041  27.163 -55.506  1.00 32.27      H1   O
ATOM   5617  N   VAL   114      -9.721  25.674 -55.406  1.00 32.99      H1   N
ATOM   5618  CA  VAL   114      -8.990  24.643 -56.122  1.00 34.40      H1   C
ATOM   5619  CB  VAL   114      -8.865  23.356 -55.288  1.00 32.69      H1   C
ATOM   5620  CG1 VAL   114      -8.002  22.346 -56.026  1.00 30.00      H1   C
ATOM   5621  CG2 VAL   114      -8.294  23.671 -53.916  1.00 32.66      H1   C
ATOM   5622  C   VAL   114      -9.745  24.305 -57.401  1.00 37.41      H1   C
ATOM   5623  O   VAL   114     -10.881  23.828 -57.349  1.00 37.23      H1   O
ATOM   5624  N   SER   115      -9.119  24.564 -58.544  1.00 39.18      H1   N
ATOM   5625  CA  SER   115      -9.668  24.115 -59.813  1.00 44.39      H1   C
ATOM   5626  CB  SER   115     -10.785  25.059 -60.277  1.00 45.61      H1   C
ATOM   5627  OG  SER   115     -10.365  25.884 -61.347  1.00 45.98      H1   O
ATOM   5628  C   SER   115      -8.586  24.014 -60.881  1.00 46.47      H1   C
ATOM   5629  O   SER   115      -7.543  24.667 -60.796  1.00 45.73      H1   O
ATOM   5630  N   SER   116      -8.841  23.177 -61.880  1.00 49.79      H1   N
ATOM   5631  CA  SER   116      -7.891  22.949 -62.961  1.00 53.39      H1   C
ATOM   5632  CB  SER   116      -7.763  21.450 -63.230  1.00 52.69      H1   C
ATOM   5633  OG  SER   116      -9.040  20.871 -63.434  1.00 54.43      H1   O
ATOM   5634  C   SER   116      -8.348  23.658 -64.230  1.00 55.63      H1   C
ATOM   5635  O   SER   116      -7.679  23.595 -65.261  1.00 57.09      H1   O
ATOM   5636  N   ALA   117      -9.491  24.332 -64.146  1.00 57.80      H1   N
ATOM   5637  CA  ALA   117     -10.149  24.878 -65.329  1.00 60.79      H1   C
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ATOM   5638  CB  ALA   117     -11.572  25.305 -64.983  1.00 60.52      H1   C
ATOM   5639  C   ALA   117      -9.391  26.049 -65.946  1.00 62.07      H1   C
ATOM   5640  O   ALA   117      -8.832  26.890 -65.240  1.00 62.18      H1   O
ATOM   5641  N   SER   118      -9.380  26.095 -67.274  1.00 64.43      H1   N
ATOM   5642  CA  SER   118      -8.766  27.201 -67.996  1.00 65.80      H1   C
ATOM   5643  CB  SER   118      -7.636  26.692 -68.890  1.00 66.05      H1   C
ATOM   5644  OG  SER   118      -6.810  27.764 -69.309  1.00 68.87      H1   O
ATOM   5645  C   SER   118      -9.807  27.920 -68.845  1.00 65.94      H1   C
ATOM   5646  O   SER   118     -10.856  27.358 -69.164  1.00 65.51      H1   O
ATOM   5647  N   THR   119      -9.505  29.161 -69.211  1.00 66.97      H1   N
ATOM   5648  CA  THR   119     -10.462  30.027 -69.893  1.00 67.67      H1   C
ATOM   5649  CB  THR   119      -9.775  31.297 -70.430  1.00 67.99      H1   C
ATOM   5650  OG1 THR   119      -9.195  32.026 -69.339  1.00 68.98      H1   O
ATOM   5651  CG2 THR   119     -10.784  32.181 -71.146  1.00 67.51      H1   C
ATOM   5652  C   THR   119     -11.167  29.336 -71.054  1.00 67.83      H1   C
ATOM   5653  O   THR   119     -10.543  28.631 -71.848  1.00 67.72      H1   O
ATOM   5654  N   LYS   120     -12.477  29.546 -71.141  1.00 67.80      H1   N
ATOM   5655  CA  LYS   120     -13.282  28.985 -72.217  1.00 68.20      H1   C
ATOM   5656  CB  LYS   120     -13.685  27.545 -71.889  1.00 67.62      H1   C
ATOM   5657  CG  LYS   120     -14.595  26.908 -72.931  1.00 67.51      H1   C
ATOM   5658  CD  LYS   120     -15.178  25.590 -72.436  1.00 69.11      H1   C
ATOM   5659  CE  LYS   120     -16.168  25.004 -73.437  1.00 69.25      H1   C
ATOM   5660  NZ  LYS   120     -17.270  25.956 -73.782  1.00 70.85      H1   N
ATOM   5661  C   LYS   120     -14.537  29.824 -72.432  1.00 69.04      H1   C
ATOM   5662  O   LYS   120     -15.329  30.023 -71.508  1.00 69.38      H1   O
ATOM   5663  N   GLY   121     -14.715  30.308 -73.659  1.00 69.06      H1   N
ATOM   5664  CA  GLY   121     -15.886  31.102 -73.982  1.00 68.10      H1   C
ATOM   5665  C   GLY   121     -17.159  30.283 -73.922  1.00 68.13      H1   C
ATOM   5666  O   GLY   121     -17.129  29.061 -74.089  1.00 67.67      H1   O
ATOM   5667  N   PRO   122     -18.303  30.936 -73.678  1.00 67.96      H1   N
ATOM   5668  CD  PRO   122     -18.403  32.385 -73.433  1.00 67.50      H1   C
ATOM   5669  CA  PRO   122     -19.596  30.260 -73.523  1.00 68.40      H1   C
ATOM   5670  CB  PRO   122     -20.492  31.337 -72.925  1.00 68.31      H1   C
ATOM   5671  CG  PRO   122     -19.885  32.622 -73.381  1.00 68.44      H1   C
ATOM   5672  C   PRO   122     -20.173  29.701 -74.819  1.00 69.03      H1   C
ATOM   5673  O   PRO   122     -19.899  30.207 -75.906  1.00 69.06      H1   O
ATOM   5674  N   SER   123     -20.972  28.649 -74.688  1.00 69.50      H1   N
ATOM   5675  CA  SER   123     -21.822  28.187 -75.776  1.00 70.46      H1   C
ATOM   5676  CB  SER   123     -21.828  26.658 -75.823  1.00 70.16      H1   C
ATOM   5677  OG  SER   123     -22.886  26.177 -76.631  1.00 70.42      H1   O
ATOM   5678  C   SER   123     -23.238  28.708 -75.532  1.00 71.61      H1   C
ATOM   5679  O   SER   123     -23.796  28.518 -74.450  1.00 71.85      H1   O
ATOM   5680  N   VAL   124     -23.814  29.366 -76.536  1.00 71.93      H1   N
ATOM   5681  CA  VAL   124     -25.099  30.039 -76.368  1.00 71.46      H1   C
ATOM   5682  CB  VAL   124     -25.035  31.486 -76.898  1.00 70.79      H1   C
ATOM   5683  CG1 VAL   124     -26.356  32.191 -76.640  1.00 69.89      H1   C
ATOM   5684  CG2 VAL   124     -23.886  32.233 -76.236  1.00 68.40      H1   C
ATOM   5685  C   VAL   124     -26.244  29.313 -77.073  1.00 72.64      H1   C
ATOM   5686  O   VAL   124     -26.151  28.983 -78.255  1.00 73.01      H1   O
ATOM   5687  N   PHE   125     -27.324  29.071 -76.338  1.00 73.89      H1   N
ATOM   5688  CA  PHE   125     -28.510  28.431 -76.894  1.00 75.85      H1   C
ATOM   5689  CB  PHE   125     -28.723  27.062 -76.247  1.00 76.97      H1   C
ATOM   5690  CG  PHE   125     -27.641  26.071 -76.557  1.00 78.42      H1   C
ATOM   5691  CD1 PHE   125     -27.704  25.293 -77.702  1.00 78.83      H1   C
ATOM   5692  CD2 PHE   125     -26.560  25.916 -75.704  1.00 78.71      H1   C
ATOM   5693  CE1 PHE   125     -26.712  24.380 -77.992  1.00 79.49      H1   C
ATOM   5694  CE2 PHE   125     -25.564  25.004 -75.987  1.00 79.38      H1   C
ATOM   5695  CZ  PHE   125     -25.639  24.235 -77.134  1.00 80.12      H1   C
ATOM   5696  C   PHE   125     -29.749  29.292 -76.671  1.00 77.12      H1   C
ATOM   5697  O   PHE   125     -29.803  30.084 -75.731  1.00 76.96      H1   O
ATOM   5698  N   PRO   126     -30.760  29.151 -77.543  1.00 78.18      H1   N
ATOM   5699  CD  PRO   126     -30.705  28.371 -78.793  1.00 78.12      H1   C
ATOM   5700  CA  PRO   126     -32.048  29.838 -77.388  1.00 78.24      H1   C
ATOM   5701  CB  PRO   126     -32.641  29.793 -78.789  1.00 77.98      H1   C
ATOM   5702  CG  PRO   126     -32.099  28.522 -79.358  1.00 77.57      H1   C
ATOM   5703  C   PRO   126     -32.951  29.136 -76.376  1.00 78.94      H1   C
ATOM   5704  O   PRO   126     -33.020  27.909 -76.344  1.00 78.95      H1   O
ATOM   5705  N   LEU   127     -33.643  29.918 -75.555  1.00 80.12      H1   N
ATOM   5706  CA  LEU   127     -34.690  29.378 -74.695  1.00 81.26      H1   C
ATOM   5707  CB  LEU   127     -34.451  29.790 -73.239  1.00 80.50      H1   C
ATOM   5708  CG  LEU   127     -33.138  29.323 -72.604  1.00 79.91      H1   C
ATOM   5709  CD1 LEU   127     -33.050  29.821 -71.171  1.00 79.12      H1   C
ATOM   5710  CD2 LEU   127     -33.061  27.806 -72.647  1.00 79.76      H1   C
ATOM   5711  C   LEU   127     -36.039  29.905 -75.174  1.00 82.39      H1   C
ATOM   5712  O   LEU   127     -36.562  30.883 -74.639  1.00 82.90      H1   O
ATOM   5713  N   ALA   128     -36.595  29.247 -76.187  1.00 83.36      H1   N
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ATOM   5714  CA  ALA  128     -37.769  29.753 -76.891  1.00 84.32      H1   C
ATOM   5715  CB  ALA  128     -37.982  28.959 -78.174  1.00 84.16      H1   C
ATOM   5716  C   ALA  128     -39.031  29.711 -76.036  1.00 85.07      H1   C
ATOM   5717  O   ALA  128     -39.252  28.766 -75.275  1.00 85.35      H1   O
ATOM   5718  N   PRO  129     -39.884  30.740 -76.164  1.00 85.56      H1   N
ATOM   5719  CD  PRO  129     -39.691  31.851 -77.113  1.00 85.77      H1   C
ATOM   5720  CA  PRO  129     -41.121  30.890 -75.387  1.00 85.80      H1   C
ATOM   5721  CB  PRO  129     -41.604  32.293 -75.747  1.00 85.81      H1   C
ATOM   5722  CG  PRO  129     -41.019  32.555 -77.094  1.00 86.05      H1   C
ATOM   5723  C   PRO  129     -42.175  29.827 -75.697  1.00 86.17      H1   C
ATOM   5724  O   PRO  129     -42.318  29.391 -76.840  1.00 85.88      H1   O
ATOM   5725  N   SER  130     -42.911  29.421 -74.667  1.00 86.84      H1   N
ATOM   5726  CA  SER  130     -43.963  28.421 -74.816  1.00 87.43      H1   C
ATOM   5727  CB  SER  130     -44.385  27.890 -73.441  1.00 87.92      H1   C
ATOM   5728  OG  SER  130     -43.298  27.275 -72.771  1.00 88.97      H1   O
ATOM   5729  C   SER  130     -45.175  29.014 -75.531  1.00 87.44      H1   C
ATOM   5730  O   SER  130     -45.780  28.371 -76.391  1.00 87.06      H1   O
ATOM   5731  N   GLY  136     -50.193  34.409 -68.488  1.00 99.67      H1   N
ATOM   5732  CA  GLY  136     -51.016  34.123 -69.648  1.00 99.80      H1   C
ATOM   5733  C   GLY  136     -51.050  35.272 -70.638  1.00100.02      H1   C
ATOM   5734  O   GLY  136     -51.114  35.055 -71.850  1.00100.03      H1   O
ATOM   5735  N   GLY  137     -51.007  36.498 -70.123  1.00 99.85      H1   N
ATOM   5736  CA  GLY  137     -50.995  37.666 -70.986  1.00 99.13      H1   C
ATOM   5737  C   GLY  137     -49.608  37.961 -71.527  1.00 98.66      H1   C
ATOM   5738  O   GLY  137     -49.456  38.642 -72.542  1.00 98.56      H1   O
ATOM   5739  N   THR  138     -48.591  37.446 -70.842  1.00 98.05      H1   N
ATOM   5740  CA  THR  138     -47.209  37.602 -71.282  1.00 96.71      H1   C
ATOM   5741  CB  THR  138     -46.393  38.445 -70.280  1.00 96.65      H1   C
ATOM   5742  OG1 THR  138     -46.424  37.817 -68.991  1.00 96.53      H1   O
ATOM   5743  CG2 THR  138     -46.967  39.851 -70.175  1.00 95.98      H1   C
ATOM   5744  C   THR  138     -46.526  36.247 -71.444  1.00 95.56      H1   C
ATOM   5745  O   THR  138     -46.947  35.250 -70.853  1.00 95.36      H1   O
ATOM   5746  N   ALA  139     -45.472  36.220 -72.253  1.00 94.21      H1   N
ATOM   5747  CA  ALA  139     -44.659  35.022 -72.418  1.00 92.92      H1   C
ATOM   5748  CB  ALA  139     -44.780  34.497 -73.846  1.00 93.04      H1   C
ATOM   5749  C   ALA  139     -43.202  35.339 -72.095  1.00 91.71      H1   C
ATOM   5750  O   ALA  139     -42.713  36.430 -72.395  1.00 91.15      H1   O
ATOM   5751  N   ALA  140     -42.513  34.383 -71.480  1.00 90.37      H1   N
ATOM   5752  CA  ALA  140     -41.123  34.582 -71.092  1.00 88.70      H1   C
ATOM   5753  CB  ALA  140     -40.928  34.187 -69.634  1.00 89.09      H1   C
ATOM   5754  C   ALA  140     -40.178  33.783 -71.982  1.00 87.42      H1   C
ATOM   5755  O   ALA  140     -40.491  32.667 -72.400  1.00 86.82      H1   O
ATOM   5756  N   LEU  141     -39.020  34.368 -72.267  1.00 86.13      H1   N
ATOM   5757  CA  LEU  141     -38.002  33.722 -73.084  1.00 85.33      H1   C
ATOM   5758  CB  LEU  141     -38.303  33.941 -74.572  1.00 85.25      H1   C
ATOM   5759  CG  LEU  141     -38.499  35.376 -75.081  1.00 85.32      H1   C
ATOM   5760  CD1 LEU  141     -37.162  36.103 -75.165  1.00 84.61      H1   C
ATOM   5761  CD2 LEU  141     -39.154  35.334 -76.453  1.00 85.35      H1   C
ATOM   5762  C   LEU  141     -36.621  34.275 -72.741  1.00 85.01      H1   C
ATOM   5763  O   LEU  141     -36.496  35.396 -72.247  1.00 85.36      H1   O
ATOM   5764  N   GLY  142     -35.587  33.484 -73.001  1.00 83.90      H1   N
ATOM   5765  CA  GLY  142     -34.233  33.941 -72.752  1.00 83.19      H1   C
ATOM   5766  C   GLY  142     -33.231  33.175 -73.589  1.00 82.79      H1   C
ATOM   5767  O   GLY  142     -33.609  32.491 -74.539  1.00 83.09      H1   O
ATOM   5768  N   CYS  143     -31.952  33.289 -73.248  1.00 82.17      H1   N
ATOM   5769  CA  CYS  143     -30.940  32.465 -73.890  1.00 81.85      H1   C
ATOM   5770  C   CYS  143     -29.954  31.864 -72.882  1.00 80.13      H1   C
ATOM   5771  O   CYS  143     -29.537  32.518 -71.925  1.00 79.94      H1   O
ATOM   5772  CB  CYS  143     -30.204  33.270 -74.974  1.00 83.41      H1   C
ATOM   5773  SG  CYS  143     -28.939  34.449 -74.400  1.00 87.73      H1   S
ATOM   5774  N   LEU  144     -29.601  30.602 -73.109  1.00 78.24      H1   N
ATOM   5775  CA  LEU  144     -28.826  29.808 -72.161  1.00 75.92      H1   C
ATOM   5776  CB  LEU  144     -29.286  28.349 -72.233  1.00 75.88      H1   C
ATOM   5777  CG  LEU  144     -28.506  27.285 -71.462  1.00 76.15      H1   C
ATOM   5778  CD1 LEU  144     -28.543  27.594 -69.977  1.00 76.40      H1   C
ATOM   5779  CD2 LEU  144     -29.115  25.915 -71.739  1.00 75.59      H1   C
ATOM   5780  C   LEU  144     -27.329  29.895 -72.449  1.00 74.33      H1   C
ATOM   5781  O   LEU  144     -26.890  29.633 -73.566  1.00 74.67      H1   O
ATOM   5782  N   VAL  145     -26.549  30.260 -71.436  1.00 72.28      H1   N
ATOM   5783  CA  VAL  145     -25.103  30.401 -71.591  1.00 70.90      H1   C
ATOM   5784  CB  VAL  145     -24.623  31.746 -71.003  1.00 69.27      H1   C
ATOM   5785  CG1 VAL  145     -23.127  31.873 -71.147  1.00 69.00      H1   C
ATOM   5786  CG2 VAL  145     -25.319  32.894 -71.705  1.00 68.74      H1   C
ATOM   5787  C   VAL  145     -24.358  29.254 -70.899  1.00 71.16      H1   C
ATOM   5788  O   VAL  145     -24.173  29.269 -69.680  1.00 71.43      H1   O
ATOM   5789  N   LYS  146     -23.927  28.266 -71.684  1.00 70.62      H1   N
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ATOM   5790  CA  LYS   146      -23.358  27.031 -71.141  1.00 70.17      H1   C
ATOM   5791  CB  LYS   146      -23.870  25.819 -71.925  1.00 71.40      H1   C
ATOM   5792  CG  LYS   146      -25.286  25.393 -71.583  1.00 74.93      H1   C
ATOM   5793  CD  LYS   146      -25.822  24.395 -72.605  1.00 78.01      H1   C
ATOM   5794  CE  LYS   146      -24.948  23.146 -72.701  1.00 79.46      H1   C
ATOM   5795  NZ  LYS   146      -25.126  22.233 -71.534  1.00 80.50      H1   N
ATOM   5796  C   LYS   146      -21.831  26.988 -71.127  1.00 68.82      H1   C
ATOM   5797  O   LYS   146      -21.173  27.538 -72.011  1.00 68.87      H1   O
ATOM   5798  N   ASP   147      -21.286  26.330 -70.106  1.00 66.87      H1   N
ATOM   5799  CA  ASP   147      -19.906  25.850 -70.110  1.00 64.95      H1   C
ATOM   5800  CB  ASP   147      -19.759  24.720 -71.129  1.00 64.08      H1   C
ATOM   5801  CG  ASP   147      -20.730  23.582 -70.877  1.00 65.39      H1   C
ATOM   5802  OD1 ASP   147      -20.976  23.252 -69.697  1.00 64.41      H1   O
ATOM   5803  OD2 ASP   147      -21.250  23.015 -71.862  1.00 66.30      H1   O
ATOM   5804  C   ASP   147      -18.857  26.920 -70.390  1.00 64.29      H1   C
ATOM   5805  O   ASP   147      -18.121  26.829 -71.368  1.00 64.65      H1   O
ATOM   5806  N   TYR   148      -18.775  27.925 -69.527  1.00 63.41      H1   N
ATOM   5807  CA  TYR   148      -17.760  28.956 -69.687  1.00 63.64      H1   C
ATOM   5808  CB  TYR   148      -18.411  30.291 -70.061  1.00 63.45      H1   C
ATOM   5809  CG  TYR   148      -19.292  30.886 -68.984  1.00 62.08      H1   C
ATOM   5810  CD1 TYR   148      -18.787  31.813 -68.081  1.00 61.94      H1   C
ATOM   5811  CE1 TYR   148      -19.594  32.383 -67.112  1.00 61.63      H1   C
ATOM   5812  CD2 TYR   148      -20.632  30.539 -68.887  1.00 62.19      H1   C
ATOM   5813  CE2 TYR   148      -21.448  31.103 -67.920  1.00 62.61      H1   C
ATOM   5814  CZ  TYR   148      -20.923  32.024 -67.037  1.00 61.07      H1   C
ATOM   5815  OH  TYR   148      -21.731  32.594 -66.082  1.00 61.02      H1   O
ATOM   5816  C   TYR   148      -16.920  29.126 -68.425  1.00 64.03      H1   C
ATOM   5817  O   TYR   148      -17.296  28.664 -67.348  1.00 63.78      H1   O
ATOM   5818  N   PHE   149      -15.777  29.788 -68.572  1.00 64.42      H1   N
ATOM   5819  CA  PHE   149      -14.897  30.073 -67.446  1.00 65.06      H1   C
ATOM   5820  CB  PHE   149      -14.209  28.787 -66.972  1.00 63.77      H1   C
ATOM   5821  CG  PHE   149      -13.335  28.979 -65.765  1.00 62.58      H1   C
ATOM   5822  CD1 PHE   149      -12.012  29.371 -65.904  1.00 61.56      H1   C
ATOM   5823  CD2 PHE   149      -13.843  28.789 -64.489  1.00 62.08      H1   C
ATOM   5824  CE1 PHE   149      -11.210  29.576 -64.795  1.00 60.99      H1   C
ATOM   5825  CE2 PHE   149      -13.047  28.992 -63.373  1.00 62.34      H1   C
ATOM   5826  CZ  PHE   149      -11.727  29.386 -63.527  1.00 61.88      H1   C
ATOM   5827  C   PHE   149      -13.844  31.092 -67.865  1.00 66.30      H1   C
ATOM   5828  O   PHE   149      -13.365  31.069 -68.998  1.00 67.25      H1   O
ATOM   5829  N   PRO   150      -13.473  32.006 -66.955  1.00 67.74      H1   N
ATOM   5830  CD  PRO   150      -12.274  32.850 -67.107  1.00 67.53      H1   C
ATOM   5831  CA  PRO   150      -14.104  32.195 -65.645  1.00 68.63      H1   C
ATOM   5832  CB  PRO   150      -13.037  32.928 -64.841  1.00 67.62      H1   C
ATOM   5833  CG  PRO   150      -12.295  33.712 -65.866  1.00 67.46      H1   C
ATOM   5834  C   PRO   150      -15.389  33.010 -65.742  1.00 70.45      H1   C
ATOM   5835  O   PRO   150      -16.077  32.997 -66.764  1.00 71.47      H1   O
ATOM   5836  N   GLU   151      -15.700  33.719 -64.663  1.00 71.80      H1   N
ATOM   5837  CA  GLU   151      -16.743  34.734 -64.676  1.00 72.52      H1   C
ATOM   5838  CB  GLU   151      -17.550  34.681 -63.378  1.00 72.76      H1   C
ATOM   5839  CG  GLU   151      -18.290  33.376 -63.155  1.00 74.07      H1   C
ATOM   5840  CD  GLU   151      -19.458  33.535 -62.204  1.00 74.56      H1   C
ATOM   5841  OE1 GLU   151      -20.618  33.454 -62.665  1.00 74.92      H1   O
ATOM   5842  OE2 GLU   151      -19.216  33.745 -60.997  1.00 73.75      H1   O
ATOM   5843  C   GLU   151      -16.079  36.099 -64.806  1.00 73.24      H1   C
ATOM   5844  O   GLU   151      -14.868  36.227 -64.624  1.00 72.62      H1   O
ATOM   5845  N   PRO   152      -16.867  37.142 -65.113  1.00 74.62      H1   N
ATOM   5846  CD  PRO   152      -16.420  38.539 -64.959  1.00 74.59      H1   C
ATOM   5847  CA  PRO   152      -18.292  37.070 -65.452  1.00 75.10      H1   C
ATOM   5848  CB  PRO   152      -18.849  38.361 -64.867  1.00 75.76      H1   C
ATOM   5849  CG  PRO   152      -17.712  39.337 -65.029  1.00 75.41      H1   C
ATOM   5850  C   PRO   152      -18.556  36.968 -66.952  1.00 75.76      H1   C
ATOM   5851  O   PRO   152      -17.630  36.989 -67.761  1.00 75.62      H1   O
ATOM   5852  N   VAL   153      -19.830  36.854 -67.312  1.00 76.74      H1   N
ATOM   5853  CA  VAL   153      -20.266  37.125 -68.676  1.00 78.44      H1   C
ATOM   5854  CB  VAL   153      -20.722  35.836 -69.410  1.00 78.41      H1   C
ATOM   5855  CG1 VAL   153      -19.573  34.848 -69.489  1.00 78.22      H1   C
ATOM   5856  CG2 VAL   153      -21.909  35.219 -68.700  1.00 78.16      H1   C
ATOM   5857  C   VAL   153      -21.428  38.114 -68.651  1.00 79.27      H1   C
ATOM   5858  O   VAL   153      -22.353  37.981 -67.848  1.00 79.85      H1   O
ATOM   5859  N   THR   154      -21.367  39.111 -69.528  1.00 79.67      H1   N
ATOM   5860  CA  THR   154      -22.408  40.130 -69.613  1.00 79.68      H1   C
ATOM   5861  CB  THR   154      -21.808  41.505 -69.963  1.00 79.51      H1   C
ATOM   5862  OG1 THR   154      -21.139  41.422 -71.228  1.00 79.48      H1   O
ATOM   5863  CG2 THR   154      -20.811  41.945 -68.897  1.00 78.20      H1   C
ATOM   5864  C   THR   154      -23.417  39.754 -70.693  1.00 80.21      H1   C
ATOM   5865  O   THR   154      -23.034  39.413 -71.812  1.00 80.43      H1   O
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ATOM   5866  N   VAL  155     -24.703  39.813 -70.359  1.00 80.71      H1   N
ATOM   5867  CA  VAL  155     -25.752  39.518 -71.330  1.00 81.00      H1   C
ATOM   5868  CB  VAL  155     -26.580  38.284 -70.910  1.00 80.93      H1   C
ATOM   5869  CG1 VAL  155     -27.614  37.965 -71.979  1.00 80.65      H1   C
ATOM   5870  CG2 VAL  155     -25.666  37.094 -70.689  1.00 81.15      H1   C
ATOM   5871  C   VAL  155     -26.701  40.702 -71.503  1.00 81.78      H1   C
ATOM   5872  O   VAL  155     -27.351  41.139 -70.551  1.00 81.71      H1   O
ATOM   5873  N   SER  156     -26.772  41.216 -72.727  1.00 82.68      H1   N
ATOM   5874  CA  SER  156     -27.654  42.334 -73.046  1.00 83.16      H1   C
ATOM   5875  CB  SER  156     -26.847  43.473 -73.674  1.00 83.30      H1   C
ATOM   5876  OG  SER  156     -27.652  44.620 -73.878  1.00 84.63      H1   O
ATOM   5877  C   SER  156     -28.739  41.868 -74.014  1.00 83.16      H1   C
ATOM   5878  O   SER  156     -28.596  40.831 -74.658  1.00 82.89      H1   O
ATOM   5879  N   TRP  157     -29.825  42.627 -74.110  1.00 83.58      H1   N
ATOM   5880  CA  TRP  157     -30.919  42.259 -75.001  1.00 84.15      H1   C
ATOM   5881  CB  TRP  157     -32.180  41.952 -74.188  1.00 83.42      H1   C
ATOM   5882  CG  TRP  157     -32.120  40.627 -73.494  1.00 83.40      H1   C
ATOM   5883  CD2 TRP  157     -32.489  39.355 -74.042  1.00 83.53      H1   C
ATOM   5884  CE2 TRP  157     -32.248  38.386 -73.047  1.00 83.19      H1   C
ATOM   5885  CE3 TRP  157     -33.000  38.941 -75.277  1.00 83.42      H1   C
ATOM   5886  CD1 TRP  157     -31.684  40.385 -72.224  1.00 83.06      H1   C
ATOM   5887  NE1 TRP  157     -31.757  39.040 -71.947  1.00 82.93      H1   N
ATOM   5888  CZ2 TRP  157     -32.498  37.030 -73.250  1.00 83.39      H1   C
ATOM   5889  CZ3 TRP  157     -33.247  37.594 -75.476  1.00 83.62      H1   C
ATOM   5890  CH2 TRP  157     -32.997  36.655 -74.468  1.00 83.34      H1   C
ATOM   5891  C   TRP  157     -31.219  43.334 -76.041  1.00 84.76      H1   C
ATOM   5892  O   TRP  157     -31.410  44.505 -75.706  1.00 84.03      H1   O
ATOM   5893  N   ASN  158     -31.260  42.921 -77.306  1.00 85.58      H1   N
ATOM   5894  CA  ASN  158     -31.495  43.842 -78.411  1.00 86.37      H1   C
ATOM   5895  CB  ASN  158     -32.946  44.331 -78.389  1.00 86.40      H1   C
ATOM   5896  CG  ASN  158     -33.946  43.196 -78.553  1.00 87.21      H1   C
ATOM   5897  OD1 ASN  158     -33.691  42.224 -79.268  1.00 86.86      H1   O
ATOM   5898  ND2 ASN  158     -35.091  43.315 -77.889  1.00 86.97      H1   N
ATOM   5899  C   ASN  158     -30.536  45.026 -78.315  1.00 86.98      H1   C
ATOM   5900  O   ASN  158     -30.939  46.183 -78.439  1.00 86.86      H1   O
ATOM   5901  N   SER  159     -29.264  44.717 -78.077  1.00 87.36      H1   N
ATOM   5902  CA  SER  159     -28.203  45.716 -78.013  1.00 87.62      H1   C
ATOM   5903  CB  SER  159     -27.970  46.322 -79.398  1.00 87.30      H1   C
ATOM   5904  OG  SER  159     -27.479  45.341 -80.297  1.00 86.83      H1   O
ATOM   5905  C   SER  159     -28.471  46.822 -76.999  1.00 87.96      H1   C
ATOM   5906  O   SER  159     -27.791  47.849 -76.998  1.00 87.94      H1   O
ATOM   5907  N   GLY  160     -29.459  46.608 -76.136  1.00 88.50      H1   N
ATOM   5908  CA  GLY  160     -29.716  47.551 -75.062  1.00 88.84      H1   C
ATOM   5909  C   GLY  160     -31.108  48.150 -75.103  1.00 88.98      H1   C
ATOM   5910  O   GLY  160     -31.570  48.731 -74.120  1.00 88.61      H1   O
ATOM   5911  N   ALA  161     -31.779  48.006 -76.242  1.00 89.24      H1   N
ATOM   5912  CA  ALA  161     -33.105  48.585 -76.430  1.00 89.63      H1   C
ATOM   5913  CB  ALA  161     -33.569  48.373 -77.868  1.00 89.23      H1   C
ATOM   5914  C   ALA  161     -34.112  47.971 -75.461  1.00 89.76      H1   C
ATOM   5915  O   ALA  161     -35.083  48.619 -75.067  1.00 89.81      H1   O
ATOM   5916  N   LEU  162     -33.874  46.718 -75.084  1.00 89.21      H1   N
ATOM   5917  CA  LEU  162     -34.769  46.006 -74.182  1.00 88.42      H1   C
ATOM   5918  CB  LEU  162     -35.189  44.673 -74.806  1.00 87.77      H1   C
ATOM   5919  CG  LEU  162     -36.018  43.738 -73.923  1.00 87.40      H1   C
ATOM   5920  CD1 LEU  162     -37.267  44.456 -73.439  1.00 86.87      H1   C
ATOM   5921  CD2 LEU  162     -36.384  42.491 -74.710  1.00 86.79      H1   C
ATOM   5922  C   LEU  162     -34.106  45.753 -72.833  1.00 88.21      H1   C
ATOM   5923  O   LEU  162     -33.176  44.954 -72.727  1.00 88.43      H1   O
ATOM   5924  N   THR  163     -34.591  46.441 -71.804  1.00 87.73      H1   N
ATOM   5925  CA  THR  163     -34.069  46.270 -70.453  1.00 87.13      H1   C
ATOM   5926  CB  THR  163     -33.414  47.569 -69.937  1.00 87.76      H1   C
ATOM   5927  OG1 THR  163     -34.374  48.634 -69.962  1.00 88.69      H1   O
ATOM   5928  CG2 THR  163     -32.218  47.946 -70.804  1.00 87.58      H1   C
ATOM   5929  C   THR  163     -35.194  45.880 -69.503  1.00 86.16      H1   C
ATOM   5930  O   THR  163     -34.957  45.286 -68.449  1.00 85.76      H1   O
ATOM   5931  N   SER  164     -36.420  46.216 -69.888  1.00 84.83      H1   N
ATOM   5932  CA  SER  164     -37.584  45.961 -69.052  1.00 83.71      H1   C
ATOM   5933  CB  SER  164     -38.737  46.877 -69.475  1.00 84.14      H1   C
ATOM   5934  OG  SER  164     -39.855  46.731 -68.616  1.00 84.04      H1   O
ATOM   5935  C   SER  164     -38.016  44.500 -69.149  1.00 82.36      H1   C
ATOM   5936  O   SER  164     -38.185  43.962 -70.244  1.00 82.47      H1   O
ATOM   5937  N   GLY  165     -38.193  43.864 -67.995  1.00 80.97      H1   N
ATOM   5938  CA  GLY  165     -38.616  42.476 -67.972  1.00 79.30      H1   C
ATOM   5939  C   GLY  165     -37.452  41.504 -68.016  1.00 78.12      H1   C
ATOM   5940  O   GLY  165     -37.651  40.294 -68.120  1.00 77.82      H1   O
ATOM   5941  N   VAL  166     -36.233  42.030 -67.935  1.00 76.72      H1   N
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ATOM   5942  CA  VAL   166     -35.037  41.205 -68.040  1.00 75.81      H1   C
ATOM   5943  CB  VAL   166     -33.905  41.954 -68.770  1.00 75.90      H1   C
ATOM   5944  CG1 VAL   166     -32.673  41.070 -68.856  1.00 75.62      H1   C
ATOM   5945  CG2 VAL   166     -34.365  42.364 -70.161  1.00 75.64      H1   C
ATOM   5946  C   VAL   166     -34.526  40.775 -66.670  1.00 75.14      H1   C
ATOM   5947  O   VAL   166     -34.253  41.610 -65.809  1.00 75.37      H1   O
ATOM   5948  N   HIS   167     -34.396  39.466 -66.480  1.00 73.47      H1   N
ATOM   5949  CA  HIS   167     -33.935  38.911 -65.214  1.00 72.00      H1   C
ATOM   5950  CB  HIS   167     -35.057  38.090 -64.569  1.00 72.27      H1   C
ATOM   5951  CG  HIS   167     -34.777  37.683 -63.155  1.00 72.47      H1   C
ATOM   5952  CD2 HIS   167     -33.696  37.887 -62.363  1.00 72.15      H1   C
ATOM   5953  ND1 HIS   167     -35.684  36.981 -62.390  1.00 71.80      H1   N
ATOM   5954  CE1 HIS   167     -35.176  36.771 -61.189  1.00 71.72      H1   C
ATOM   5955  NE2 HIS   167     -33.971  37.311 -61.147  1.00 72.50      H1   N
ATOM   5956  C   HIS   167     -32.708  38.028 -65.438  1.00 70.88      H1   C
ATOM   5957  O   HIS   167     -32.783  37.008 -66.121  1.00 69.91      H1   O
ATOM   5958  N   THR   168     -31.581  38.424 -64.855  1.00 70.00      H1   N
ATOM   5959  CA  THR   168     -30.335  37.687 -65.027  1.00 68.86      H1   C
ATOM   5960  CB  THR   168     -29.156  38.650 -65.269  1.00 69.61      H1   C
ATOM   5961  OG1 THR   168     -29.449  39.489 -66.394  1.00 70.62      H1   O
ATOM   5962  CG2 THR   168     -27.878  37.867 -65.548  1.00 69.75      H1   C
ATOM   5963  C   THR   168     -30.026  36.826 -63.803  1.00 67.17      H1   C
ATOM   5964  O   THR   168     -29.731  37.344 -62.727  1.00 67.02      H1   O
ATOM   5965  N   PHE   169     -30.093  35.510 -63.979  1.00 64.86      H1   N
ATOM   5966  CA  PHE   169     -29.878  34.576 -62.881  1.00 62.90      H1   C
ATOM   5967  CB  PHE   169     -30.615  33.263 -63.150  1.00 62.05      H1   C
ATOM   5968  CG  PHE   169     -32.108  33.400 -63.176  1.00 62.68      H1   C
ATOM   5969  CD1 PHE   169     -32.748  33.972 -64.266  1.00 62.88      H1   C
ATOM   5970  CD2 PHE   169     -32.877  32.943 -62.118  1.00 62.49      H1   C
ATOM   5971  CE1 PHE   169     -34.128  34.086 -64.299  1.00 62.61      H1   C
ATOM   5972  CE2 PHE   169     -34.257  33.053 -62.144  1.00 62.55      H1   C
ATOM   5973  CZ  PHE   169     -34.884  33.625 -63.237  1.00 62.31      H1   C
ATOM   5974  C   PHE   169     -28.398  34.290 -62.683  1.00 61.96      H1   C
ATOM   5975  O   PHE   169     -27.663  34.061 -63.645  1.00 61.82      H1   O
ATOM   5976  N   PRO   170     -27.942  34.294 -61.421  1.00 60.72      H1   N
ATOM   5977  CD  PRO   170     -28.702  34.746 -60.244  1.00 60.03      H1   C
ATOM   5978  CA  PRO   170     -26.555  33.964 -61.078  1.00 59.89      H1   C
ATOM   5979  CB  PRO   170     -26.526  34.083 -59.554  1.00 59.29      H1   C
ATOM   5980  CG  PRO   170     -27.618  35.058 -59.246  1.00 59.11      H1   C
ATOM   5981  C   PRO   170     -26.132  32.576 -61.561  1.00 59.02      H1   C
ATOM   5982  O   PRO   170     -26.948  31.653 -61.647  1.00 57.43      H1   O
ATOM   5983  N   ALA   171     -24.847  32.440 -61.873  1.00 58.34      H1   N
ATOM   5984  CA  ALA   171     -24.329  31.229 -62.496  1.00 58.50      H1   C
ATOM   5985  CB  ALA   171     -22.955  31.503 -63.094  1.00 57.77      H1   C
ATOM   5986  C   ALA   171     -24.243  30.066 -61.517  1.00 58.57      H1   C
ATOM   5987  O   ALA   171     -24.030  30.259 -60.320  1.00 57.67      H1   O
ATOM   5988  N   VAL   172     -24.415  28.855 -62.035  1.00 58.56      H1   N
ATOM   5989  CA  VAL   172     -24.118  27.654 -61.268  1.00 59.16      H1   C
ATOM   5990  CB  VAL   172     -25.148  26.538 -61.553  1.00 58.86      H1   C
ATOM   5991  CG1 VAL   172     -25.070  26.114 -63.011  1.00 59.09      H1   C
ATOM   5992  CG2 VAL   172     -24.898  25.353 -60.632  1.00 60.06      H1   C
ATOM   5993  C   VAL   172     -22.721  27.157 -61.641  1.00 59.63      H1   C
ATOM   5994  O   VAL   172     -22.304  27.266 -62.796  1.00 59.35      H1   O
ATOM   5995  N   LEU   173     -21.990  26.631 -60.663  1.00 59.79      H1   N
ATOM   5996  CA  LEU   173     -20.688  26.032 -60.937  1.00 60.87      H1   C
ATOM   5997  CB  LEU   173     -19.698  26.348 -59.811  1.00 59.98      H1   C
ATOM   5998  CG  LEU   173     -18.205  26.413 -60.167  1.00 60.10      H1   C
ATOM   5999  CD1 LEU   173     -17.376  26.202 -58.905  1.00 57.51      H1   C
ATOM   6000  CD2 LEU   173     -17.858  25.356 -61.201  1.00 58.71      H1   C
ATOM   6001  C   LEU   173     -20.879  24.528 -61.041  1.00 61.60      H1   C
ATOM   6002  O   LEU   173     -21.379  23.897 -60.110  1.00 62.78      H1   O
ATOM   6003  N   GLN   174     -20.482  23.956 -62.172  1.00 62.51      H1   N
ATOM   6004  CA  GLN   174     -20.744  22.547 -62.446  1.00 63.92      H1   C
ATOM   6005  CB  GLN   174     -21.044  22.352 -63.929  1.00 65.18      H1   C
ATOM   6006  CG  GLN   174     -22.139  23.256 -64.450  1.00 67.24      H1   C
ATOM   6007  CD  GLN   174     -22.385  23.065 -65.928  1.00 69.04      H1   C
ATOM   6008  OE1 GLN   174     -23.070  22.125 -66.337  1.00 70.60      H1   O
ATOM   6009  NE2 GLN   174     -21.823  23.953 -66.741  1.00 68.01      H1   N
ATOM   6010  C   GLN   174     -19.565  21.672 -62.050  1.00 63.96      H1   C
ATOM   6011  O   GLN   174     -18.445  22.159 -61.895  1.00 64.54      H1   O
ATOM   6012  N   SER   175     -19.820  20.376 -61.896  1.00 63.64      H1   N
ATOM   6013  CA  SER   175     -18.777  19.438 -61.501  1.00 63.62      H1   C
ATOM   6014  CB  SER   175     -19.346  18.016 -61.407  1.00 64.57      H1   C
ATOM   6015  OG  SER   175     -19.975  17.626 -62.616  1.00 66.59      H1   O
ATOM   6016  C   SER   175     -17.610  19.464 -62.481  1.00 63.00      H1   C
ATOM   6017  O   SER   175     -16.541  18.926 -62.197  1.00 64.06      H1   O
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ATOM   6018  N   SER   176     -17.816  20.095 -63.632  1.00 61.79      H1   N
ATOM   6019  CA  SER   176     -16.776  20.187 -64.650  1.00 60.10      H1   C
ATOM   6020  CB  SER   176     -17.399  20.418 -66.025  1.00 59.94      H1   C
ATOM   6021  OG  SER   176     -17.863  21.752 -66.150  1.00 60.80      H1   O
ATOM   6022  C   SER   176     -15.806  21.323 -64.355  1.00 59.39      H1   C
ATOM   6023  O   SER   176     -14.733  21.398 -64.951  1.00 59.39      H1   O
ATOM   6024  N   GLY   177     -16.191  22.211 -63.443  1.00 57.70      H1   N
ATOM   6025  CA  GLY   177     -15.384  23.389 -63.176  1.00 56.90      H1   C
ATOM   6026  C   GLY   177     -15.778  24.550 -64.068  1.00 56.87      H1   C
ATOM   6027  O   GLY   177     -15.157  25.614 -64.043  1.00 56.89      H1   O
ATOM   6028  N   LEU   178     -16.822  24.345 -64.860  1.00 56.63      H1   N
ATOM   6029  CA  LEU   178     -17.298  25.370 -65.778  1.00 57.28      H1   C
ATOM   6030  CB  LEU   178     -17.436  24.786 -67.188  1.00 57.13      H1   C
ATOM   6031  CG  LEU   178     -16.115  24.423 -67.872  1.00 56.25      H1   C
ATOM   6032  CD1 LEU   178     -16.387  23.798 -69.230  1.00 55.52      H1   C
ATOM   6033  CD2 LEU   178     -15.268  25.675 -68.017  1.00 56.22      H1   C
ATOM   6034  C   LEU   178     -18.631  25.959 -65.328  1.00 57.07      H1   C
ATOM   6035  O   LEU   178     -19.428  25.295 -64.665  1.00 55.79      H1   O
ATOM   6036  N   TYR   179     -18.864  27.213 -65.697  1.00 57.71      H1   N
ATOM   6037  CA  TYR   179     -20.064  27.921 -65.280  1.00 59.38      H1   C
ATOM   6038  CB  TYR   179     -19.725  29.378 -64.961  1.00 58.68      H1   C
ATOM   6039  CG  TYR   179     -18.831  29.558 -63.754  1.00 58.53      H1   C
ATOM   6040  CD1 TYR   179     -19.346  29.474 -62.465  1.00 58.26      H1   C
ATOM   6041  CE1 TYR   179     -18.540  29.680 -61.356  1.00 58.61      H1   C
ATOM   6042  CD2 TYR   179     -17.482  29.849 -63.904  1.00 57.93      H1   C
ATOM   6043  CE2 TYR   179     -16.667  30.058 -62.803  1.00 58.41      H1   C
ATOM   6044  CZ  TYR   179     -17.200  29.974 -61.531  1.00 58.60      H1   C
ATOM   6045  OH  TYR   179     -16.394  30.195 -60.438  1.00 56.00      H1   O
ATOM   6046  C   TYR   179     -21.174  27.877 -66.328  1.00 60.05      H1   C
ATOM   6047  O   TYR   179     -20.914  27.891 -67.531  1.00 59.38      H1   O
ATOM   6048  N   SER   180     -22.413  27.819 -65.852  1.00 61.78      H1   N
ATOM   6049  CA  SER   180     -23.589  27.990 -66.698  1.00 64.17      H1   C
ATOM   6050  CB  SER   180     -24.290  26.646 -66.917  1.00 63.61      H1   C
ATOM   6051  OG  SER   180     -23.501  25.775 -67.708  1.00 65.69      H1   O
ATOM   6052  C   SER   180     -24.554  28.960 -66.024  1.00 65.91      H1   C
ATOM   6053  O   SER   180     -24.671  28.979 -64.797  1.00 65.96      H1   O
ATOM   6054  N   HIS   181     -25.242  29.768 -66.823  1.00 67.43      H1   N
ATOM   6055  CA  HIS   181     -26.293  30.625 -66.290  1.00 69.34      H1   C
ATOM   6056  CB  HIS   181     -25.689  31.850 -65.606  1.00 70.05      H1   C
ATOM   6057  CG  HIS   181     -25.466  33.009 -66.524  1.00 70.38      H1   C
ATOM   6058  CD2 HIS   181     -24.413  33.336 -67.309  1.00 70.89      H1   C
ATOM   6059  ND1 HIS   181     -26.387  34.023 -66.676  1.00 70.55      H1   N
ATOM   6060  CE1 HIS   181     -25.909  34.927 -67.513  1.00 71.32      H1   C
ATOM   6061  NE2 HIS   181     -24.713  34.533 -67.911  1.00 71.85      H1   N
ATOM   6062  C   HIS   181     -27.264  31.075 -67.371  1.00 70.14      H1   C
ATOM   6063  O   HIS   181     -26.990  30.942 -68.564  1.00 69.87      H1   O
ATOM   6064  N   SER   182     -28.402  31.609 -66.941  1.00 71.10      H1   N
ATOM   6065  CA  SER   182     -29.458  32.010 -67.859  1.00 70.94      H1   C
ATOM   6066  CB  SER   182     -30.702  31.146 -67.636  1.00 70.38      H1   C
ATOM   6067  OG  SER   182     -30.418  29.774 -67.830  1.00 68.38      H1   O
ATOM   6068  C   SER   182     -29.827  33.479 -67.688  1.00 71.53      H1   C
ATOM   6069  O   SER   182     -29.763  34.023 -66.584  1.00 71.22      H1   O
ATOM   6070  N   SER   183     -30.205  34.114 -68.794  1.00 72.30      H1   N
ATOM   6071  CA  SER   183     -30.900  35.396 -68.757  1.00 72.41      H1   C
ATOM   6072  CB  SER   183     -30.111  36.456 -69.525  1.00 71.36      H1   C
ATOM   6073  OG  SER   183     -30.820  37.682 -69.569  1.00 69.72      H1   O
ATOM   6074  C   SER   183     -32.276  35.227 -69.388  1.00 73.63      H1   C
ATOM   6075  O   SER   183     -32.414  34.573 -70.421  1.00 73.54      H1   O
ATOM   6076  N   VAL   184     -33.294  35.809 -68.762  1.00 75.17      H1   N
ATOM   6077  CA  VAL   184     -34.658  35.702 -69.269  1.00 76.46      H1   C
ATOM   6078  CB  VAL   184     -35.491  34.712 -68.424  1.00 76.29      H1   C
ATOM   6079  CG1 VAL   184     -36.949  34.751 -68.852  1.00 76.19      H1   C
ATOM   6080  CG2 VAL   184     -34.941  33.311 -68.594  1.00 76.69      H1   C
ATOM   6081  C   VAL   184     -35.378  37.045 -69.300  1.00 77.45      H1   C
ATOM   6082  O   VAL   184     -35.375  37.793 -68.320  1.00 77.46      H1   O
ATOM   6083  N   VAL   185     -35.992  37.345 -70.439  1.00 78.31      H1   N
ATOM   6084  CA  VAL   185     -36.816  38.538 -70.572  1.00 78.79      H1   C
ATOM   6085  CB  VAL   185     -36.362  39.400 -71.778  1.00 78.96      H1   C
ATOM   6086  CG1 VAL   185     -36.360  38.566 -73.049  1.00 78.89      H1   C
ATOM   6087  CG2 VAL   185     -37.281  40.601 -71.931  1.00 79.45      H1   C
ATOM   6088  C   VAL   185     -38.281  38.151 -70.743  1.00 78.60      H1   C
ATOM   6089  O   VAL   185     -38.632  37.366 -71.624  1.00 77.83      H1   O
ATOM   6090  N   THR   186     -39.132  38.696 -69.880  1.00 79.19      H1   N
ATOM   6091  CA  THR   186     -40.571  38.499 -69.998  1.00 80.16      H1   C
ATOM   6092  CB  THR   186     -41.244  38.482 -68.609  1.00 80.16      H1   C
ATOM   6093  OG1 THR   186     -40.924  39.689 -67.907  1.00 80.54      H1   O
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ATOM   6094  CG2 THR   186     -40.761  37.290 -67.796  1.00 80.44      H1    C
ATOM   6095  C   THR   186     -41.172  39.627 -70.833  1.00 80.74      H1    C
ATOM   6096  O   THR   186     -41.107  40.798 -70.455  1.00 79.91      H1    O
ATOM   6097  N   VAL   187     -41.750  39.268 -71.975  1.00 82.12      H1    N
ATOM   6098  CA  VAL   187     -42.248  40.258 -72.923  1.00 83.45      H1    C
ATOM   6099  CB  VAL   187     -41.451  40.210 -74.246  1.00 83.13      H1    C
ATOM   6100  CG1 VAL   187     -39.975  40.456 -73.975  1.00 82.39      H1    C
ATOM   6101  CG2 VAL   187     -41.662  38.869 -74.933  1.00 82.96      H1    C
ATOM   6102  C   VAL   187     -43.726  40.048 -73.239  1.00 84.60      H1    C
ATOM   6103  O   VAL   187     -44.303  39.012 -72.906  1.00 83.97      H1    O
ATOM   6104  N   PRO   188     -44.357  41.041 -73.886  1.00 86.10      H1    N
ATOM   6105  CD  PRO   188     -43.802  42.380 -74.148  1.00 86.23      H1    C
ATOM   6106  CA  PRO   188     -45.756  40.939 -74.316  1.00 87.32      H1    C
ATOM   6107  CB  PRO   188     -46.050  42.313 -74.919  1.00 87.01      H1    C
ATOM   6108  CG  PRO   188     -45.028  43.220 -74.315  1.00 86.99      H1    C
ATOM   6109  C   PRO   188     -45.950  39.825 -75.339  1.00 88.92      H1    C
ATOM   6110  O   PRO   188     -45.245  39.772 -76.347  1.00 89.36      H1    O
ATOM   6111  N   SER   189     -46.908  38.940 -75.080  1.00 90.12      H1    N
ATOM   6112  CA  SER   189     -47.239  37.889 -76.033  1.00 91.74      H1    C
ATOM   6113  CB  SER   189     -48.429  37.067 -75.529  1.00 91.44      H1    C
ATOM   6114  OG  SER   189     -48.108  36.379 -74.333  1.00 91.54      H1    O
ATOM   6115  C   SER   189     -47.584  38.513 -77.382  1.00 93.06      H1    C
ATOM   6116  O   SER   189     -47.261  37.962 -78.436  1.00 93.63      H1    O
ATOM   6117  N   SER   190     -48.233  39.673 -77.334  1.00 94.02      H1    N
ATOM   6118  CA  SER   190     -48.654  40.386 -78.536  1.00 94.90      H1    C
ATOM   6119  CB  SER   190     -49.228  41.754 -78.159  1.00 94.23      H1    C
ATOM   6120  OG  SER   190     -50.258  41.630 -77.192  1.00 94.02      H1    O
ATOM   6121  C   SER   190     -47.498  40.582 -79.512  1.00 95.63      H1    C
ATOM   6122  O   SER   190     -47.679  40.497 -80.727  1.00 95.93      H1    O
ATOM   6123  N   SER   191     -46.311  40.845 -78.974  1.00 96.22      H1    N
ATOM   6124  CA  SER   191     -45.161  41.202 -79.796  1.00 96.93      H1    C
ATOM   6125  CB  SER   191     -44.210  42.100 -79.002  1.00 97.27      H1    C
ATOM   6126  OG  SER   191     -44.862  43.293 -78.596  1.00 97.43      H1    O
ATOM   6127  C   SER   191     -44.405  39.981 -80.314  1.00 97.19      H1    C
ATOM   6128  O   SER   191     -43.393  40.116 -81.003  1.00 96.64      H1    O
ATOM   6129  N   LEU   192     -44.895  38.792 -79.982  1.00 97.72      H1    N
ATOM   6130  CA  LEU   192     -44.297  37.561 -80.489  1.00 98.54      H1    C
ATOM   6131  CB  LEU   192     -44.718  36.367 -79.626  1.00 98.53      H1    C
ATOM   6132  CG  LEU   192     -44.246  36.361 -78.170  1.00 98.25      H1    C
ATOM   6133  CD1 LEU   192     -44.734  35.095 -77.483  1.00 98.23      H1    C
ATOM   6134  CD2 LEU   192     -42.727  36.446 -78.118  1.00 97.62      H1    C
ATOM   6135  C   LEU   192     -44.719  37.323 -81.935  1.00 98.79      H1    C
ATOM   6136  O   LEU   192     -45.907  37.187 -82.232  1.00 98.91      H1    O
ATOM   6137  N   GLY   193     -43.738  37.272 -82.831  1.00 98.91      H1    N
ATOM   6138  CA  GLY   193     -44.034  37.097 -84.241  1.00 99.03      H1    C
ATOM   6139  C   GLY   193     -43.844  38.374 -85.037  1.00 98.92      H1    C
ATOM   6140  O   GLY   193     -43.566  38.330 -86.236  1.00 98.95      H1    O
ATOM   6141  N   THR   194     -43.995  39.515 -84.373  1.00 98.94      H1    N
ATOM   6142  CA  THR   194     -43.785  40.808 -85.018  1.00 98.85      H1    C
ATOM   6143  CB  THR   194     -45.009  41.738 -84.838  1.00 98.60      H1    C
ATOM   6144  OG1 THR   194     -45.217  41.997 -83.444  1.00 98.43      H1    O
ATOM   6145  CG2 THR   194     -46.257  41.093 -85.424  1.00 98.49      H1    C
ATOM   6146  C   THR   194     -42.556  41.508 -84.446  1.00 98.74      H1    C
ATOM   6147  O   THR   194     -42.136  42.554 -84.944  1.00 98.84      H1    O
ATOM   6148  N   GLN   195     -41.986  40.928 -83.394  1.00 98.32      H1    N
ATOM   6149  CA  GLN   195     -40.809  41.500 -82.750  1.00 97.95      H1    C
ATOM   6150  CB  GLN   195     -41.181  42.046 -81.368  1.00 97.62      H1    C
ATOM   6151  CG  GLN   195     -40.009  42.597 -80.572  1.00 97.74      H1    C
ATOM   6152  CD  GLN   195     -39.320  43.757 -81.265  1.00 98.15      H1    C
ATOM   6153  OE1 GLN   195     -38.732  43.594 -82.335  1.00 98.48      H1    O
ATOM   6154  NE2 GLN   195     -39.387  44.936 -80.656  1.00 97.92      H1    N
ATOM   6155  C   GLN   195     -39.694  40.465 -82.615  1.00 97.59      H1    C
ATOM   6156  O   GLN   195     -39.919  39.356 -82.127  1.00 97.42      H1    O
ATOM   6157  N   THR   196     -38.493  40.832 -83.052  1.00 96.87      H1    N
ATOM   6158  CA  THR   196     -37.335  39.951 -82.936  1.00 96.09      H1    C
ATOM   6159  CB  THR   196     -36.406  40.071 -84.167  1.00 96.10      H1    C
ATOM   6160  OG1 THR   196     -35.943  41.421 -84.292  1.00 96.22      H1    O
ATOM   6161  CG2 THR   196     -37.146  39.672 -85.434  1.00 95.59      H1    C
ATOM   6162  C   THR   196     -36.526  40.270 -81.681  1.00 95.48      H1    C
ATOM   6163  O   THR   196     -36.262  41.434 -81.375  1.00 95.11      H1    O
ATOM   6164  N   TYR   197     -36.137  39.225 -80.958  1.00 94.60      H1    N
ATOM   6165  CA  TYR   197     -35.347  39.389 -79.745  1.00 93.36      H1    C
ATOM   6166  CB  TYR   197     -36.104  38.817 -78.545  1.00 93.41      H1    C
ATOM   6167  CG  TYR   197     -37.457  39.455 -78.317  1.00 92.83      H1    C
ATOM   6168  CD1 TYR   197     -38.628  38.773 -78.621  1.00 92.54      H1    C
ATOM   6169  CE1 TYR   197     -39.867  39.354 -78.419  1.00 92.56      H1    C
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ATOM	6170	CD2	TYR	197	-37.561	40.741	-77.801	1.00	92.54	H1	C
ATOM	6171	CE2	TYR	197	-38.794	41.331	-77.596	1.00	92.67	H1	C
ATOM	6172	CZ	TYR	197	-39.945	40.633	-77.907	1.00	92.86	H1	C
ATOM	6173	OH	TYR	197	-41.175	41.221	-77.710	1.00	92.25	H1	O
ATOM	6174	C	TYR	197	-34.000	38.690	-79.888	1.00	92.48	H1	C
ATOM	6175	O	TYR	197	-33.937	37.498	-80.190	1.00	92.42	H1	O
ATOM	6176	N	ILE	198	-32.925	39.441	-79.670	1.00	91.09	H1	N
ATOM	6177	CA	ILE	198	-31.577	38.901	-79.783	1.00	89.67	H1	C
ATOM	6178	CB	ILE	198	-30.846	39.489	-81.011	1.00	89.35	H1	C
ATOM	6179	CG2	ILE	198	-29.408	38.996	-81.045	1.00	89.56	H1	C
ATOM	6180	CG1	ILE	198	-31.579	39.091	-82.295	1.00	88.73	H1	C
ATOM	6181	CD1	ILE	198	-30.918	39.598	-83.560	1.00	87.61	H1	C
ATOM	6182	C	ILE	198	-30.760	39.201	-78.530	1.00	89.23	H1	C
ATOM	6183	O	ILE	198	-30.556	40.362	-78.170	1.00	88.50	H1	O
ATOM	6184	N	CYS	199	-30.292	38.145	-77.870	1.00	88.78	H1	N
ATOM	6185	CA	CYS	199	-29.523	38.287	-76.640	1.00	87.96	H1	C
ATOM	6186	C	CYS	199	-28.039	38.438	-76.971	1.00	87.57	H1	C
ATOM	6187	O	CYS	199	-27.521	37.774	-77.868	1.00	87.15	H1	O
ATOM	6188	CB	CYS	199	-29.752	37.069	-75.731	1.00	87.80	H1	C
ATOM	6189	SG	CYS	199	-28.628	35.661	-76.005	1.00	86.80	H1	S
ATOM	6190	N	ASN	200	-27.363	39.323	-76.247	1.00	87.80	H1	N
ATOM	6191	CA	ASN	200	-26.000	39.714	-76.593	1.00	87.93	H1	C
ATOM	6192	CB	ASN	200	-25.917	41.235	-76.743	1.00	88.63	H1	C
ATOM	6193	CG	ASN	200	-27.051	41.801	-77.577	1.00	89.36	H1	C
ATOM	6194	OD1	ASN	200	-27.673	42.794	-77.201	1.00	89.44	H1	O
ATOM	6195	ND2	ASN	200	-27.326	41.171	-78.716	1.00	89.25	H1	N
ATOM	6196	C	ASN	200	-24.999	39.254	-75.539	1.00	87.45	H1	C
ATOM	6197	O	ASN	200	-24.758	39.948	-74.550	1.00	87.13	H1	O
ATOM	6198	N	VAL	201	-24.408	38.086	-75.766	1.00	86.80	H1	N
ATOM	6199	CA	VAL	201	-23.438	37.526	-74.835	1.00	85.93	H1	C
ATOM	6200	CB	VAL	201	-23.413	35.987	-74.926	1.00	85.26	H1	C
ATOM	6201	CG1	VAL	201	-22.441	35.421	-73.907	1.00	85.22	H1	C
ATOM	6202	CG2	VAL	201	-24.809	35.433	-74.698	1.00	84.35	H1	C
ATOM	6203	C	VAL	201	-22.038	38.062	-75.121	1.00	85.88	H1	C
ATOM	6204	O	VAL	201	-21.636	38.188	-76.277	1.00	85.83	H1	O
ATOM	6205	N	ASN	202	-21.302	38.382	-74.062	1.00	86.08	H1	N
ATOM	6206	CA	ASN	202	-19.929	38.856	-74.196	1.00	86.41	H1	C
ATOM	6207	CB	ASN	202	-19.897	40.388	-74.196	1.00	86.12	H1	C
ATOM	6208	CG	ASN	202	-18.503	40.945	-74.437	1.00	86.38	H1	C
ATOM	6209	OD1	ASN	202	-17.597	40.226	-74.860	1.00	86.49	H1	O
ATOM	6210	ND2	ASN	202	-18.327	42.234	-74.168	1.00	86.34	H1	N
ATOM	6211	C	ASN	202	-19.063	38.322	-73.056	1.00	86.59	H1	C
ATOM	6212	O	ASN	202	-19.273	38.666	-71.893	1.00	86.68	H1	O
ATOM	6213	N	HIS	203	-18.089	37.483	-73.397	1.00	87.00	H1	N
ATOM	6214	CA	HIS	203	-17.166	36.934	-72.409	1.00	87.34	H1	C
ATOM	6215	CB	HIS	203	-17.108	35.409	-72.537	1.00	88.04	H1	C
ATOM	6216	CG	HIS	203	-16.304	34.741	-71.465	1.00	89.65	H1	C
ATOM	6217	CD2	HIS	203	-16.174	35.015	-70.145	1.00	90.06	H1	C
ATOM	6218	ND1	HIS	203	-15.509	33.641	-71.707	1.00	89.81	H1	N
ATOM	6219	CE1	HIS	203	-14.923	33.267	-70.583	1.00	89.71	H1	C
ATOM	6220	NE2	HIS	203	-15.310	34.084	-69.620	1.00	90.14	H1	N
ATOM	6221	C	HIS	203	-15.772	37.524	-72.603	1.00	87.37	H1	C
ATOM	6222	O	HIS	203	-14.946	36.961	-73.318	1.00	87.61	H1	O
ATOM	6223	N	LYS	204	-15.517	38.656	-71.953	1.00	87.39	H1	N
ATOM	6224	CA	LYS	204	-14.282	39.411	-72.154	1.00	87.67	H1	C
ATOM	6225	CB	LYS	204	-14.296	40.671	-71.281	1.00	87.25	H1	C
ATOM	6226	CG	LYS	204	-15.279	41.733	-71.759	1.00	88.05	H1	C
ATOM	6227	CD	LYS	204	-15.674	42.676	-70.637	1.00	88.66	H1	C
ATOM	6228	CE	LYS	204	-14.453	43.279	-69.965	1.00	89.19	H1	C
ATOM	6229	NZ	LYS	204	-14.820	44.035	-68.736	1.00	90.12	H1	N
ATOM	6230	C	LYS	204	-12.996	38.621	-71.903	1.00	87.80	H1	C
ATOM	6231	O	LYS	204	-11.983	38.852	-72.566	1.00	88.12	H1	O
ATOM	6232	N	PRO	205	-13.013	37.683	-70.940	1.00	87.81	H1	N
ATOM	6233	CD	PRO	205	-14.006	37.497	-69.868	1.00	87.68	H1	C
ATOM	6234	CA	PRO	205	-11.854	36.799	-70.763	1.00	87.47	H1	C
ATOM	6235	CB	PRO	205	-12.254	35.915	-69.583	1.00	87.20	H1	C
ATOM	6236	CG	PRO	205	-13.239	36.737	-68.825	1.00	86.89	H1	C
ATOM	6237	C	PRO	205	-11.542	35.975	-72.012	1.00	87.26	H1	C
ATOM	6238	O	PRO	205	-10.378	35.786	-72.369	1.00	86.44	H1	O
ATOM	6239	N	SER	206	-12.589	35.492	-72.673	1.00	87.15	H1	N
ATOM	6240	CA	SER	206	-12.432	34.595	-73.812	1.00	87.33	H1	C
ATOM	6241	CB	SER	206	-13.477	33.480	-73.738	1.00	86.84	H1	C
ATOM	6242	OG	SER	206	-13.303	32.540	-74.781	1.00	87.39	H1	O
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Walker, Nigel P.C.
Piper, Derek E.
Shan, Bei
Shen, Wenyan
Chan, Joyce Chi Yee
King, Chadwick Terence
Ketchem, Randal Robert
Mehlin, Christopher
Carabeo, Teresa
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Glu Arg Ile Thr Pro Pro Arg Tyr Arg Ala Asp Glu Tyr Gln Pro Pro
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Asp Gly Gly Ser Leu Val Glu Val Tyr Leu Leu Asp Thr Ser Ile Gln
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Ser Asp His Arg Glu Ile Glu Gly Arg Val Met Val Thr Asp Phe Glu
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Ala Gly Val Ala Lys Gly Ala Ser Met Arg Ser Leu Arg Val Leu Asn
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Thr Val Gly Ala Thr Asn Ala Gln Asp Gln Pro Val Thr Leu Gly Thr
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Leu Gly Thr Asn Phe Gly Arg Cys Val Asp Leu Phe Ala Pro Gly Glu
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Asp Ile Ile Gly Ala Ser Ser Asp Cys Ser Thr Cys Phe Val Ser Gln
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Glu Asp Gln Arg Val Leu Thr Pro Asn Leu Val Ala Ala Leu Pro Pro
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Ser Thr His Gly Ala Gly Trp Gln Leu Phe Cys Arg Thr Val Trp Ser
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Ala His Ser Gly Pro Thr Arg Met Ala Thr Ala Ile Ala Arg Cys Ala
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Cys Leu Leu Pro Gln Ala Asn Cys Ser Val His Thr Ala Pro Pro Ala
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Glu Ala Ser Met Gly Thr Arg Val His Cys His Gln Gln Gly His Val
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Leu Thr Gly Cys Ser Ser His Trp Glu Val Glu Asp Leu Gly Thr His
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Lys Pro Pro Val Leu Arg Pro Arg Gly Gln Pro Asn Gln Cys Val Gly
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His Arg Glu Ala Ser Ile His Ala Ser Cys Cys His Ala Pro Gly Leu
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Glu Cys Lys Val Lys Glu His Gly Ile Pro Ala Pro Gln Gly Gln Val
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Thr Val Ala Cys Glu Glu Gly Trp Thr Leu Thr Gly Cys Ser Ala Leu
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His Arg Cys Ala Lys Asp Pro Trp Arg Leu Pro Gly Thr Tyr Val Val
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Val Leu Lys Glu Glu Thr His Leu Ser Gln Ser Glu Arg Thr Ala Arg
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Arg Leu Gln Ala Gln Ala Ala Arg Arg Gly Tyr Leu Thr Lys Ile Leu
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His Val Phe His Gly Leu Leu Pro Gly Phe Leu Val Lys Met Ser Gly
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Asp Leu Leu Glu Leu Ala Leu Lys Leu Pro His Val Asp Tyr Ile Glu
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Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg
145   150   155   160
Ile Thr Pro Pro Arg Tyr Arg Ala Asp Glu Tyr Gln Pro Pro Asp Gly
                165   170   175
Gly Ser Leu Val Glu Val Tyr Leu Leu Asp Thr Ser Ile Gln Ser Asp
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His Arg Glu Ile Glu Gly Arg Val Met Val Thr Asp Phe Glu Asn Val
        195   200   205
Pro Glu Glu Asp Gly Thr Arg Phe His Arg Gln Ala Ser Lys Cys Asp
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Ser His Gly Thr His Leu Ala Gly Val Val Ser Gly Arg Asp Ala Gly
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Leu Ala Gly Gly Tyr Ser Arg Val Leu Asn Ala Ala Cys Gln Arg Leu
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Ala Arg Ala Gly Val Val Leu Val Thr Ala Ala Gly Asn Phe Arg Asp
305                 310                 315                 320
Asp Ala Cys Leu Tyr Ser Pro Ala Ser Ala Pro Glu Val Ile Thr Val
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Thr Asn Phe Gly Arg Cys Val Asp Leu Phe Ala Pro Gly Glu Asp Ile
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Thr Ser Gln Ala Ala Ala His Val Ala Gly Ile Ala Ala Met Met Leu
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Ser Ala Glu Pro Glu Leu Thr Leu Ala Glu Leu Arg Gln Arg Leu Ile
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His Phe Ser Ala Lys Asp Val Ile Asn Glu Ala Trp Phe Pro Glu Asp
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Gln Arg Val Leu Thr Pro Asn Leu Val Ala Ala Leu Pro Pro Ser Thr
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His Gly Ala Gly Trp Gln Leu Phe Cys Arg Thr Val Trp Ser Ala His
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Ser Gly Pro Thr Arg Met Ala Thr Ala Ile Ala Arg Cys Ala Pro Asp
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Glu Glu Leu Leu Ser Cys Ser Ser Phe Ser Arg Ser Gly Lys Arg Arg
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Gly Glu Arg Met Glu Ala Gln Gly Gly Lys Leu Val Cys Arg Ala His
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Asn Ala Phe Gly Gly Glu Gly Val Tyr Ala Ile Ala Arg Cys Cys Leu
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Leu Pro Gln Ala Asn Cys Ser Val His Thr Ala Pro Pro Ala Glu Ala
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Ser Met Gly Thr Arg Val His Cys His Gln Gln Gly His Val Leu Thr
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Gly Cys Ser Ser His Trp Glu Val Glu Asp Leu Gly Thr His Lys Pro
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Pro Val Leu Arg Pro Arg Gly Gln Pro Asn Gln Cys Val Gly His Arg
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Glu Ala Ser Ile His Ala Ser Cys Cys His Ala Pro Gly Leu Glu Cys
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Lys Val Lys Glu His Gly Ile Pro Ala Pro Gln Gly Gln Val Thr Val
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Ala Cys Glu Glu Gly Trp Thr Leu Thr Gly Cys Ser Ala Leu Pro Gly
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<211> 112
<212> PRT
<213> Homo sapiens

<400> 5
Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Ser Val Thr Pro Gly
1 5 10 15
Glu Pro Pro Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
20 25 30
Asn Gly Tyr Asn Phe Leu Asn Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45
Pro Gln Leu Leu Ile Tyr Leu Gly Ser His Arg Ala Ser Gly Val Pro
50 55 60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Glu Ile
65 70 75 80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Val
85 90 95
Leu Gln Thr Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105 110

<210> 6
<211> 107
<212> PRT
<213> Homo sapiens

<400> 6
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Leu
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 7
<211> 107
<212> PRT
<213> Homo sapiens

<400> 7
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Arg Ile Ser Asn Tyr
            20   25   30
Leu Ser Trp Tyr Leu Gln Lys Pro Gly Ile Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Leu
                85   90   95
Ile Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 8
<211> 107
<212> PRT
<213> Homo sapiens

<400> 8
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60

```
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Ile
                85                  90                  95
Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105
```

<210> 9
<211> 107
<212> PRT
<213> Homo sapiens

<400> 9

```
Asp Ile Leu Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1               5                  10                  15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
            20                  25                  30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Val Leu Ile
        35                  40                  45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Ser Pro Ile
                85                  90                  95
Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105
```

<210> 10
<211> 107
<212> PRT
<213> Homo sapiens

<400> 10

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1               5                  10                  15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ile Tyr
            20                  25                  30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Tyr Leu Leu Ile
        35                  40                  45
Tyr Ala Ala Ala Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Ala Pro Ile
                85                  90                  95
Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105
```

<210> 11
<211> 111

<212> PRT
<213> Homo sapiens

<400> 11
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
 1   5   10   15
Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly
            20   25   30
Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
        35   40   45
Leu Ile Tyr Gly Asn Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
                85   90   95
Leu Ser Gly Ser Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105   110

<210> 12
<211> 111
<212> PRT
<213> Homo sapiens

<400> 12
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
 1   5   10   15
Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly
            20   25   30
Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
        35   40   45
Leu Ile Ser Gly Asn Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
                85   90   95
Leu Ser Gly Ser Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105   110

<210> 13
<211> 111
<212> PRT
<213> Homo sapiens

<400> 13
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
 1   5   10   15
Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala His
            20   25   30
Tyr Asp Val His Trp Tyr Gln Gln Val Pro Gly Thr Ala Pro Lys Leu
        35   40   45

```
Leu Ile Tyr Gly Asn Thr Tyr Arg Pro Ser Gly Val Pro Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Asn Ser
                85                  90                  95
Leu Ser Gly Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 14
<211> 108
<212> PRT
<213> Homo sapiens

<400> 14

```
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20                  25                  30
Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser
                85                  90                  95
Ser Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 15
<211> 109
<212> PRT
<213> Homo sapiens

<400> 15

```
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Arg Tyr
            20                  25                  30
Asn Ser Val Ser Trp Tyr Gln His His Pro Gly Lys Ala Pro Lys Val
        35                  40                  45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Thr Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser
                85                  90                  95
Ser Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 16
<211> 109
<212> PRT
<213> Homo sapiens

<400> 16
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20   25   30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Pro Pro Lys Leu
        35   40   45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Ile Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ser Ser Tyr Thr Ser Thr
                85   90   95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 17
<211> 109
<212> PRT
<213> Homo sapiens

<400> 17
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20   25   30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Pro Pro Lys Leu
        35   40   45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Ile Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ser Ser Tyr Thr Ser Thr
                85   90   95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 18
<211> 109
<212> PRT
<213> Homo sapiens

<400> 18
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20   25   30

```
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Pro Pro Lys Leu
        35                  40                  45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ser Ser Tyr Thr Ser Thr
                85                  90                  95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Ala Val Leu
            100                 105
```

<210> 19
<211> 109
<212> PRT
<213> Homo sapiens

<400> 19

```
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20                  25                  30
Asn Ser Val Ser Trp Tyr Gln Gln Tyr Pro Gly Lys Pro Pro Lys Leu
        35                  40                  45
Lys Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ser Ser Tyr Thr Ser Thr
                85                  90                  95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 20
<211> 109
<212> PRT
<213> Homo sapiens

<400> 20

```
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20                  25                  30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Pro Pro Lys Leu
        35                  40                  45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ser Ser Tyr Thr Ser Thr
                85                  90                  95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 21
<211> 109
<212> PRT
<213> Homo sapiens

<400> 21
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20   25   30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Pro Pro Lys Leu
        35   40   45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ser Ser Tyr Thr Ser Thr
                85   90   95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 22
<211> 109
<212> PRT
<213> Homo sapiens

<400> 22
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Asn Ser Asp Val Gly Gly Tyr
            20   25   30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Pro Pro Lys Leu
        35   40   45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Ile Ser Asn Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ser Ser Tyr Thr Ser Thr
                85   90   95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 23
<211> 109
<212> PRT
<213> Homo sapiens

<400> 23
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15

```
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20                  25                  30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Tyr Thr Ser Thr
                85                  90                  95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 24
<211> 109
<212> PRT
<213> Homo sapiens

<400> 24

```
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Ala Tyr
            20                  25                  30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Arg
        35                  40                  45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Thr
                85                  90                  95
Asn Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 25
<211> 108
<212> PRT
<213> Homo sapiens

<400> 25

```
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20                  25                  30
Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser
                85                  90                  95
```

Ser Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 26
<211> 109
<212> PRT
<213> Homo sapiens

<400> 26
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
20 25 30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
35 40 45
Met Ile Tyr Glu Val Thr Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
50 55 60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Tyr Thr Ser Thr
85 90 95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 27
<211> 108
<212> PRT
<213> Homo sapiens

<400> 27
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Ser Tyr
20 25 30
Asn Leu Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
35 40 45
Met Ile Tyr Glu Gly Ser Lys Arg Pro Ser Gly Val Ser Asn Arg Phe
50 55 60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr Ala Gly Ser
85 90 95
Ser Thr Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 28
<211> 110
<212> PRT
<213> Homo sapiens

<400> 28

```
Leu Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Asn Tyr
            20                  25                  30
Asn Leu Val Ser Trp Tyr Gln Gln Tyr Ser Gly Lys Ala Pro Lys Leu
        35                  40                  45
Met Ile Tyr Glu Val Ser Lys Arg Pro Ser Gly Val Ser Asn Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr Ala Gly Ser
                85                  90                  95
Ser Thr Leu Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 29
<211> 108
<212> PRT
<213> Homo sapiens

<400> 29

```
Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln
 1               5                  10                  15
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
            20                  25                  30
Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35                  40                  45
Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
    50                  55                  60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65                  70                  75                  80
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
                85                  90                  95
Asn Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 30
<211> 109
<212> PRT
<213> Homo sapiens

<400> 30

```
Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln
 1               5                  10                  15
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Lys
            20                  25                  30
Thr Val Asn Trp Tyr Gln Gln Val Pro Gly Thr Ala Pro Lys Leu Leu
        35                  40                  45
Ile Tyr Arg Asn Asn Gln Arg Pro Leu Gly Val Pro Asp Arg Phe Ser
    50                  55                  60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65                  70                  75                  80
```

```
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
                85                  90                  95
Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 31
<211> 109
<212> PRT
<213> Homo sapiens

<400> 31

```
Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Pro Pro Gly Gln
 1               5                  10                  15
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
            20                  25                  30
Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35                  40                  45
Ile Tyr Ser Asn Asn Arg Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
    50                  55                  60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65                  70                  75                  80
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
                85                  90                  95
Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 32
<211> 110
<212> PRT
<213> Homo sapiens

<400> 32

```
Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln
 1               5                  10                  15
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
            20                  25                  30
Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35                  40                  45
Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
    50                  55                  60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65                  70                  75                  80
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Val Trp Asp Asp Ser Leu
                85                  90                  95
Asn Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 33
<211> 109
<212> PRT
<213> Homo sapiens

<400> 33
Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln
 1   5   10   15
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Lys
            20   25   30
Thr Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
        35   40   45
Ile Tyr Ser Asn Asn Arg Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
    50   55   60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65   70   75   80
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
                85   90   95
Asn Trp Val Phe Gly Ala Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 34
<211> 110
<212> PRT
<213> Homo sapiens

<400> 34
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1   5   10   15
Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
            20   25   30
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35   40   45
Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
    50   55   60
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65   70   75   80
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
                85   90   95
Ser Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu
            100   105   110

<210> 35
<211> 110
<212> PRT
<213> Homo sapiens

<400> 35
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1   5   10   15
Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
            20   25   30
Phe Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35   40   45
Ile Tyr Asp Tyr Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
    50   55   60

Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65 70 75 80
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
85 90 95
Ser Ala Tyr Val Phe Gly Thr Gly Thr Arg Val Thr Val Leu
100 105 110

<210> 36
<211> 110
<212> PRT
<213> Homo sapiens

<400> 36
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
1 5 10 15
Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
20 25 30
Phe Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45
Ile Tyr Asp Tyr Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
50 55 60
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65 70 75 80
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
85 90 95
Ser Gly Tyr Val Phe Gly Thr Gly Thr Arg Val Thr Val Leu
100 105 110

<210> 37
<211> 110
<212> PRT
<213> Homo sapiens

<400> 37
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
1 5 10 15
Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
20 25 30
Phe Val Ser Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45
Ile Tyr Asp Tyr Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
50 55 60
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65 70 75 80
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
85 90 95
Ser Ser Tyr Val Phe Gly Thr Gly Thr Arg Val Thr Val Leu
100 105 110

<210> 38
<211> 110

<212> PRT
<213> Homo sapiens

<400> 38
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1   5   10   15
Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
            20   25   30
Phe Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35   40   45
Ile Tyr Asp Tyr Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
    50   55   60
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65   70   75   80
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
                85   90   95
Ser Gly Tyr Val Phe Gly Thr Gly Thr Arg Val Thr Val Leu
            100   105   110

<210> 39
<211> 110
<212> PRT
<213> Homo sapiens

<400> 39
Gln Ser Val Leu Thr Gln Pro Pro Thr Val Ser Ala Ala Pro Gly Gln
 1   5   10   15
Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
            20   25   30
Phe Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35   40   45
Ile Tyr Asp Tyr Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
    50   55   60
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65   70   75   80
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
                85   90   95
Ser Gly Tyr Val Phe Gly Thr Gly Thr Arg Val Thr Val Leu
            100   105   110

<210> 40
<211> 110
<212> PRT
<213> Homo sapiens

<400> 40
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1   5   10   15
Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
            20   25   30
Phe Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35   40   45

```
Ile Tyr Asp Ser Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
    50                  55                  60
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Asp Ile Thr Gly Leu Gln
65                  70                  75                  80
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
                85                  90                  95
Ser Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu
            100                 105                 110
```

<210> 41
<211> 110
<212> PRT
<213> Homo sapiens

<400> 41

```
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1               5                  10                  15
Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
            20                  25                  30
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35                  40                  45
Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
    50                  55                  60
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65                  70                  75                  80
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
                85                  90                  95
Ser Ala Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 42
<211> 110
<212> PRT
<213> Homo sapiens

<400> 42

```
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1               5                  10                  15
Lys Val Thr Ile Ser Cys Ser Gly Ser Asn Ser Asn Ile Gly Asn Asn
            20                  25                  30
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35                  40                  45
Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
    50                  55                  60
Gly Ser Asn Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65                  70                  75                  80
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
                85                  90                  95
Ser Ala Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 43
<211> 107
<212> PRT
<213> Homo sapiens

<400> 43
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
 1   5   10   15
Thr Ala Ser Ile Thr Cys Ser Gly Asp Lys Leu Gly Asp Lys Tyr Ala
            20   25   30
Cys Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr
        35   40   45
Gln Asp Ser Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
    50   55   60
Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Thr Ala Val
                85   90   95
Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 44
<211> 106
<212> PRT
<213> Homo sapiens

<400> 44
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
 1   5   10   15
Thr Ala Arg Ile Thr Cys Ser Gly Asp Lys Leu Gly Asp Lys Tyr Ala
            20   25   30
Cys Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr
        35   40   45
Gln Asn Thr Lys Trp Pro Leu Gly Ile Pro Glu Arg Phe Ser Gly Ser
    50   55   60
Lys Ser Gly Asn Thr Val Thr Leu Thr Ile Ser Gly Thr Gln Ala Met
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Thr Val Val
                85   90   95
Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 45
<211> 116
<212> PRT
<213> Homo sapiens

<400> 45
Gln Pro Val Leu Thr Gln Pro Pro Ser Ala Ser Ala Ser Leu Gly Ala
 1   5   10   15
Ser Val Thr Leu Thr Cys Thr Leu Ser Ser Gly Tyr Ser Asn Tyr Lys
            20   25   30

```
Val Asp Trp Tyr Gln Gln Arg Pro Gly Lys Gly Pro Arg Phe Val Met
        35                  40                  45
Arg Val Gly Thr Gly Gly Ile Val Gly Ser Lys Gly Asp Gly Ile Pro
    50                  55                  60
Asp Arg Phe Ser Val Leu Gly Ser Gly Leu Asn Arg Tyr Leu Thr Ile
65                  70                  75                  80
Lys Asn Ile Gln Glu Glu Asp Glu Ser Asp Tyr His Cys Gly Ala Asp
                85                  90                  95
His Gly Ser Gly Ser Asn Phe Val Val Val Phe Gly Gly Gly Thr Lys
            100                 105                 110
Leu Thr Val Leu
        115
```

<210> 46
<211> 116
<212> PRT
<213> Homo sapiens

<400> 46

```
Gln Pro Val Leu Thr Gln Pro Leu Phe Ala Ser Ala Ser Leu Gly Ala
 1               5                  10                  15
Ser Val Thr Leu Thr Cys Thr Leu Ser Ser Gly Tyr Ser Ser Tyr Glu
            20                  25                  30
Val Asp Trp Tyr Gln Gln Arg Pro Gly Lys Gly Pro Arg Phe Val Met
        35                  40                  45
Arg Val Asp Thr Gly Gly Ile Val Gly Ser Lys Gly Glu Gly Ile Pro
    50                  55                  60
Asp Arg Phe Ser Val Leu Gly Ser Gly Leu Asn Arg Tyr Leu Thr Ile
65                  70                  75                  80
Lys Asn Ile Gln Glu Glu Asp Glu Ser Asp Tyr His Cys Gly Ala Asp
                85                  90                  95
His Gly Ser Gly Thr Asn Phe Val Val Val Phe Gly Gly Gly Thr Lys
            100                 105                 110
Leu Thr Val Leu
        115
```

<210> 47
<211> 114
<212> PRT
<213> Homo sapiens

<400> 47

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu
    50                  55                  60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
```

```
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
            100                 105                 110
Ser Ser
```

<210> 48
<211> 115
<212> PRT
<213> Homo sapiens

<400> 48

```
Gln Ile Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Pro Leu Thr Ser Tyr
            20                  25                  30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val
    50                  55                  60
Gln Gly Ser Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Val Tyr
65                  70                  75                  80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100                 105                 110
Val Ser Ser
        115
```

<210> 49
<211> 115
<212> PRT
<213> Homo sapiens

<400> 49

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Leu Thr Ser Tyr
            20                  25                  30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Val Ser Phe Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu
    50                  55                  60
Gln Gly Arg Gly Thr Met Thr Thr Asp Pro Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100                 105                 110
Val Ser Ser
        115
```

<210> 50
<211> 115
<212> PRT
<213> Homo sapiens

<400> 50
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Leu Thr Ser Tyr
            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Val Ser Phe Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu
    50   55   60
Gln Gly Arg Gly Thr Met Thr Thr Asp Pro Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100   105   110
Val Ser Ser
        115

<210> 51
<211> 115
<212> PRT
<213> Homo sapiens

<400> 51
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Leu Thr Ser Tyr
            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Ser Phe Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val
    50   55   60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Val Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100   105   110
Val Ser Ser
        115

<210> 52
<211> 115
<212> PRT
<213> Homo sapiens

<400> 52
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Arg Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Leu Thr Ser Tyr
            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Ser Val Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val
    50   55   60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Val Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Ser Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100   105   110
Val Ser Ser
        115

<210> 53
<211> 115
<212> PRT
<213> Homo sapiens

<400> 53
Gln Ile Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Leu Thr Ser Tyr
            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Ser Phe Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val
    50   55   60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Val Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Phe Cys
                85   90   95
Ala Arg Gly Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100   105   110
Val Ser Ser
        115

<210> 54
<211> 115
<212> PRT
<213> Homo sapiens

<400> 54
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Leu Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Leu Thr Ser Tyr
            20   25   30

```
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val
    50                  55                  60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Val Tyr
65                  70                  75                  80
Met Glu Val Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100                 105                 110
Val Ser Ser
        115
```

<210> 55
<211> 115
<212> PRT
<213> Homo sapiens

<400> 55

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Pro Leu Thr Ser Tyr
            20                  25                  30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val
    50                  55                  60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Val Tyr
65                  70                  75                  80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100                 105                 110
Val Ser Ser
        115
```

<210> 56
<211> 115
<212> PRT
<213> Homo sapiens

<400> 56

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ala Leu Thr Ser Tyr
            20                  25                  30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val
    50                  55                  60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Val Tyr
65                  70                  75                  80
```

```
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100                 105                 110
Val Ser Ser
        115
```

<210> 57
<211> 115
<212> PRT
<213> Homo sapiens

<400> 57

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr
            20                  25                  30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Val Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Phe
    50                  55                  60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Val Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100                 105                 110
Val Ser Ser
        115
```

<210> 58
<211> 115
<212> PRT
<213> Homo sapiens

<400> 58

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Pro Ser Tyr
            20                  25                  30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Glu Lys Leu
    50                  55                  60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Val Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Phe Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Val Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100                 105                 110
Val Ser Ser
        115
```

<210> 59
<211> 113
<212> PRT
<213> Homo sapiens

<400> 59
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu
    50   55   60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Tyr Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
            100   105   110
Ser

<210> 60
<211> 115
<212> PRT
<213> Homo sapiens

<400> 60
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Ser Thr Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val
    50   55   60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Tyr Thr Arg Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100   105   110
Val Ser Ser
        115

<210> 61
<211> 116
<212> PRT
<213> Homo sapiens

<400> 61
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asn Trp Gly Ala Phe Asp Val Trp Gly Gln Gly Thr Met Val
            100   105   110
Thr Val Ser Ser
        115

<210> 62
<211> 119
<212> PRT
<213> Homo sapiens

<400> 62
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Arg Tyr
            20   25   30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Asn Ile Lys His Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Glu Ser Asn Trp Gly Phe Ala Phe Asp Val Trp Gly His Gly
            100   105   110
Thr Met Val Thr Val Ser Ser
        115

<210> 63
<211> 116
<212> PRT
<213> Homo sapiens

<400> 63
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30

```
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asn Trp Gly Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val
            100                 105                 110
Thr Val Ser Ser
        115
```

<210> 64
<211> 119
<212> PRT
<213> Homo sapiens

<400> 64

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Val Val Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Glu Ser Asn Trp Gly Phe Ala Phe Asp Ile Trp Gly Gln Gly
            100                 105                 110
Thr Met Val Thr Val Ser Ser
        115
```

<210> 65
<211> 119
<212> PRT
<213> Homo sapiens

<400> 65

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Leu Thr Phe Ser Asn Phe
            20                  25                  30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
```

```
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Ser Cys
                85                  90                  95
Thr Arg Glu Ser Asn Trp Gly Phe Ala Phe Asp Ile Trp Gly Gln Gly
            100                 105                 110
Thr Met Val Thr Val Ser Ser
        115
```

<210> 66
<211> 123
<212> PRT
<213> Homo sapiens

<400> 66

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Ser Ile Ser Ser Ser Ser Ser Tyr Ile Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Tyr Asp Phe Trp Ser Gly Tyr Tyr Thr Ala Phe Asp Val
            100                 105                 110
Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
        115                 120
```

<210> 67
<211> 123
<212> PRT
<213> Homo sapiens

<400> 67

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Ser Ile Ser Ser Ser Ser Ser Tyr Ile Ser Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Phe Cys
                85                  90                  95
Ala Arg Asp Tyr Asp Phe Trp Ser Ala Tyr Tyr Asp Ala Phe Asp Val
            100                 105                 110
Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
        115                 120
```

<210> 68
<211> 112
<212> PRT
<213> Homo sapiens

<400> 68
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Lys Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
            100   105   110

<210> 69
<211> 117
<212> PRT
<213> Homo sapiens

<400> 69
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Thr Ile Ser Gly Ser Gly Gly Arg Thr Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Lys Glu Val Gly Ser Pro Phe Asp Tyr Trp Gly Gln Gly Thr Leu
            100   105   110
Val Thr Val Ser Ser
        115

<210> 70
<211> 117
<212> PRT
<213> Homo sapiens

<400> 70

```
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Lys Val Leu Met Val Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Leu
            100                 105                 110
Val Thr Val Ser Ser
        115
```

<210> 71
<211> 121
<212> PRT
<213> Homo sapiens

<400> 71

```
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Thr Ile Ser Gly Ser Gly Asp Asn Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Lys Lys Phe Val Leu Met Val Tyr Ala Met Leu Asp Tyr Trp Gly
            100                 105                 110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 72
<211> 121
<212> PRT
<213> Homo sapiens

<400> 72

```
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
```

```
Ser Thr Ile Ser Gly Ser Gly Gly Asn Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Lys Lys Phe Val Leu Met Val Tyr Ala Met Leu Asp Tyr Trp Gly
            100                 105                 110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 73
<211> 116
<212> PRT
<213> Homo sapiens

<400> 73

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val
            100                 105                 110
Thr Val Ser Ser
        115
```

<210> 74
<211> 123
<212> PRT
<213> Homo sapiens

<400> 74

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Val Ile Trp Tyr Asp Gly Ser Asp Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
```

```
Ala Arg Glu Thr Gly Pro Leu Lys Leu Tyr Tyr Tyr Gly Met Asp Val
            100                 105                 110
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 75
<211> 116
<212> PRT
<213> Homo sapiens

<400> 75

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Ile Ala Ala Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val
            100                 105                 110
Thr Val Ser Ser
        115
```

<210> 76
<211> 122
<212> PRT
<213> Homo sapiens

<400> 76

```
Gln Val His Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Phe
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Leu Ile Trp Ser Asp Gly Ser Asp Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Ala Ile Ala Ala Leu Tyr Tyr Tyr Tyr Gly Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 77
<211> 122
<212> PRT
<213> Homo sapiens

<400> 77
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Leu Ile Trp Asn Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Ala Ile Ala Ala Leu Tyr Tyr Tyr Tyr Gly Met Asp Val Trp
            100   105   110
Gly His Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 78
<211> 122
<212> PRT
<213> Homo sapiens

<400> 78
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Leu Ile Trp Asn Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Ala Ile Ala Ala Leu Tyr Tyr Tyr Tyr Gly Met Asp Val Trp
            100   105   110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 79
<211> 122
<212> PRT
<213> Homo sapiens

<400> 79

```
Gln Val His Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Phe
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Leu Ile Trp Ser Asp Gly Ser Asp Glu Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Ala Ile Ala Ala Leu Tyr Tyr Tyr Tyr Gly Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 80
<211> 122
<212> PRT
<213> Homo sapiens

<400> 80

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Leu Ile Trp Asn Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Ala Ile Ala Ala Leu Tyr Tyr Tyr Tyr Gly Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 81
<211> 122
<212> PRT
<213> Homo sapiens

<400> 81

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
```

```
Ala Ile Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Arg Gly Gly Leu Ala Ala Arg Pro Gly Gly Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 82
<211> 122
<212> PRT
<213> Homo sapiens

<400> 82

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Ile Ala Val Ala Tyr Tyr Tyr Tyr Gly Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 83
<211> 122
<212> PRT
<213> Homo sapiens

<400> 83

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Arg Ser Tyr
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Leu Ile Trp His Asp Gly Ser Asn Thr Tyr Tyr Val Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
```

```
Ala Arg Gly Ile Ala Val Ala Tyr Tyr Tyr Tyr Gly Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 84
<211> 117
<212> PRT
<213> Homo sapiens

<400> 84

```
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1               5                  10                  15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly
            20                  25                  30
Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
        35                  40                  45
Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
    50                  55                  60
Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
65                  70                  75                  80
Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
                85                  90                  95
Cys Ala Arg Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr
            100                 105                 110
Val Thr Val Ser Ser
        115
```

<210> 85
<211> 122
<212> PRT
<213> Homo sapiens

<400> 85

```
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1               5                  10                  15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Ser
            20                  25                  30
Asp Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
        35                  40                  45
Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
    50                  55                  60
Leu Lys Ser Arg Ile Thr Ile Ser Val Asp Thr Ser Lys Asn Leu Phe
65                  70                  75                  80
Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
                85                  90                  95
Cys Ala Arg Gly Gly Val Thr Thr Tyr Tyr Tyr Ala Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 86
<211> 120
<212> PRT
<213> Homo sapiens

<400> 86
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1   5   10   15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly
            20   25   30
Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
        35   40   45
Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
    50   55   60
Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
65   70   75   80
Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
                85   90   95
Cys Ala Arg Glu Asp Thr Ala Met Val Tyr Phe Asp Tyr Trp Gly Gln
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 87
<211> 121
<212> PRT
<213> Homo sapiens

<400> 87
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1   5   10   15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly
            20   25   30
Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
        35   40   45
Trp Ile Gly Tyr Ile Tyr Asn Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
    50   55   60
Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
65   70   75   80
Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
                85   90   95
Cys Ala Arg Glu Asp Thr Ala Met Val Pro Tyr Phe Asp Tyr Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 88
<211> 115
<212> PRT
<213> Homo sapiens

<400> 88

```
Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu Lys Pro Ser Glu
 1               5                  10                  15
Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser Phe Ser Gly Tyr
            20                  25                  30
Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
        35                  40                  45
Gly Glu Ile Asn His Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
    50                  55                  60
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65                  70                  75                  80
Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
                85                  90                  95
Arg Gly Gln Leu Val Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100                 105                 110
Val Ser Ser
        115
```

<210> 89
<211> 116
<212> PRT
<213> Homo sapiens

<400> 89

```
Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu Lys Pro Ser Glu
 1               5                  10                  15
Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser Phe Ser Ala Tyr
            20                  25                  30
Tyr Trp Asn Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
        35                  40                  45
Gly Glu Ile Asn His Ser Gly Arg Thr Asp Tyr Asn Pro Ser Leu Lys
    50                  55                  60
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Lys Gln Phe Ser Leu
65                  70                  75                  80
Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
                85                  90                  95
Arg Gly Gln Leu Val Pro Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val
            100                 105                 110
Thr Val Ser Ser
        115
```

<210> 90
<211> 115
<212> PRT
<213> Homo sapiens

<400> 90

```
Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1               5                  10                  15
Thr Leu Ser Leu Thr Cys Ala Ile Ser Gly Asp Ser Val Ser Ser Asn
            20                  25                  30
Ser Ala Ala Trp Asn Trp Ile Arg Gln Ser Pro Ser Arg Gly Leu Glu
        35                  40                  45
```

```
Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr Asn Asp Tyr Ala
    50                  55                  60
Val Ser Val Lys Ser Arg Ile Thr Ile Asn Pro Asp Thr Ser Lys Asn
65                  70                  75                  80
Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val
                85                  90                  95
Tyr Tyr Cys Ala Arg Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100                 105                 110
Val Ser Ser
        115
```

<210> 91
<211> 121
<212> PRT
<213> Homo sapiens

<400> 91

```
Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1               5                  10                  15
Thr Leu Ser Leu Thr Cys Ala Ile Ser Gly Asp Ser Val Ser Ser Asn
            20                  25                  30
Ser Ala Ala Trp Asn Trp Ile Arg Gln Ser Pro Ser Arg Gly Leu Glu
        35                  40                  45
Trp Leu Gly Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr Lys Asn Tyr Ser
    50                  55                  60
Val Ser Val Lys Ser Arg Ile Thr Ile Asn Pro Asp Thr Ser Lys Asn
65                  70                  75                  80
Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro Gly Asp Thr Ala Val
                85                  90                  95
Tyr Tyr Cys Ala Arg Gly Gly Pro Thr Ala Ala Phe Asp Tyr Trp Gly
            100                 105                 110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 92
<211> 345
<212> DNA
<213> Homo sapiens

<400> 92

```
cagattcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta ccccttgacc agctatggta tcagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat 180
gcacagaagg tccagggcag cgtcaccatg accacagaca catccacgag cacagtctac 240
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagaggctac 300
ggtatggacg tctggggcca agggaccacg gtcaccgtct cctct                 345
```

<210> 93
<211> 327
<212> DNA
<213> Homo sapiens

<400> 93
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60
tcctgcactg gaaccagcag tgacgttggt ggttataact ctgtctcctg gtaccaacag 120
tacccaggca aacccccaa actcaagatt tatgaggtca gtaatcggcc ctcaggggtt 180
tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240
caggctgagg acgaggctga ttatttctgc agctcatata caagcaccag catggtcttc 300
ggcggaggga ccaagctgac cgtccta 327

<210> 94
<211> 345
<212> DNA
<213> Homo sapiens

<400> 94
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta caccttaacc agctatggta tcagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg gtcagttttt ataatggtaa cacaaactat 180
gcacagaagc tccagggcag aggcaccatg accacagacc catccacgag cacagcctac 240
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagaggctac 300
ggtatggacg tctggggcca agggaccacg gtcaccgtct cctct 345

<210> 95
<211> 327
<212> DNA
<213> Homo sapiens

<400> 95
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60
tcctgcactg gaaccagcag tgacgttggt ggttataact ctgtctcctg gtaccaacag 120
cacccaggca aagcccccaa actcatgatt tatgaggtca gtaatcggcc ctcaggggtt 180
tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240
caggctgagg acgaggctga ttattactgc aattcatata caagcaccag catggtattc 300
ggcggaggga ccaagctgac cgtccta 327

<210> 96
<211> 345
<212> DNA
<213> Homo sapiens

<400> 96
caggttcagc tggtgcagtc tggagctgaa gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta caccttgacc agctatggta tcagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcagctttt acaatggtaa cacaaactat 180
gcacagaagg tccagggcag agtcaccatg accacagaca catccacgag cacagtctac 240
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagaggctac 300
ggtatggacg tctggggcca agggaccacg gtcaccgtct cctct 345

<210> 97
<211> 327
<212> DNA
<213> Homo sapiens

<400> 97
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60

tcctgcactg gaaccagcag tgacgttggt ggttataact ctgtctcctg gtaccaacag 120
cacccaggca aacccccaa actcatgatt tatgaggtca gtaatcggcc ctcaggggtt 180
tctattcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240
caggctgagg acgaggctga ttatttctgc agctcatata caagcaccag catggtcttc 300
ggcggaggga ccaagctgac cgtccta 327

<210> 98
<211> 345
<212> DNA
<213> Homo sapiens

<400> 98
cagattcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta caccttgacc agctatggta tcagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcagctttt acaatggtaa cacaaactat 180
gcacagaagg tccagggcag agtcaccatg accacagaca catccacgag cacagtctac 240
atggagctga ggagcctgag atctgacgac acggccgtgt atttctgtgc gagaggttac 300
ggtatggacg tctggggcca agggaccacg gtcaccgtct cctca 345

<210> 99
<211> 327
<212> DNA
<213> Homo sapiens

<400> 99
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60
tcctgcactg gaaccagcag tgacgttggt ggttataact ctgtctcgtg gtaccaacag 120
cacccaggca aacccccaa actcatgatt tatgaggtca gtaatcggcc ctcaggggtt 180
tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240
caggctgagg acgaggctga ttatttctgc agctcatata caagcaccag catggtcttc 300
ggcggaggga ccaagctggc cgtccta 327

<210> 100
<211> 345
<212> DNA
<213> Homo sapiens

<400> 100
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta caccttaacc agctatggta tcagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg gtcagttttt ataatggtaa cacaaactat 180
gcacagaagc tccagggcag aggcaccatg accacagacc catccacgag cacagcctac 240
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagaggctac 300
ggtatggacg tctggggcca agggaccacg gtcaccgtct cctca 345

<210> 101
<211> 327
<212> DNA
<213> Homo sapiens

<400> 101
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60
tcctgcactg gaaccagcag tgacgttggt ggttataact ctgtctcctg gtaccaacag 120
cacccaggca aagcccccaa actcatgatt tatgaggtca ctaatcggcc ctcaggggtt 180

tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240
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tcctca 366

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<212> DNA
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<212> DNA
<213> Homo sapiens

<400> 136
gaggtgcagc tgttggagtc tgggggaggc ttggtacagc ctgggggGtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc agctatgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcaact attagtggta gtggtggtag gacatattac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaagaagtt 300
ggcagtccct ttgactactg gggccaggga accctggtca ccgtctcctc a 351

<210> 137
<211> 330
<212> DNA
<213> Homo sapiens

<400> 137
cagtctgtgt tgacgcagcc gccctcagtg tctgcggccc caggacagaa ggtcaccatc 60
tcctgctctg gaagcaactc caacattggg aataattatg tatcctggta ccagcagctc 120
ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180
gaccgattct ctggctccaa ctctggcacg tcagccaccc tgggcatcac cggactccag 240
actggggacg aggccgatta ttactgcgga acatgggata gcagcctgag tgctgtggta 300
ttcggcggag ggaccaagct gaccgtccta 330

<210> 138
<211> 366
<212> DNA
<213> Homo sapiens

<400> 138
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcaatt atatggtatg atggaagtaa taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacactgtat 240
cttcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gaggaggggg 300
ggtctggcag ctcgtccggg cggtatggac gtctggggcc aagggaccac ggtcaccgtc 360
tcctca 366

<210> 139
<211> 318
<212> DNA
<213> Homo sapiens

<400> 139
tcctatgagc tgactcagcc accctcagtg tctgtgtccc caggacagac agccagaatc 60
acctgctctg gagataaatt gggggataaa tatgcttgct ggtatcagca gaaaccaggc 120
cagtcccctg tgctggtcat ctatcaaaat accaagtggc ccttagggat ccctgagcga 180
ttctctggct ccaagtctgg gaacacagtc actctgacca tcagcgggac ccaggctatg 240
gatgaggctg actattactg tcaggcgtgg gacagcagca ctgtggtatt cggcggaggg 300
accaagctga ccgtccta 318

<210> 140
<211> 366
<212> DNA
<213> Homo sapiens

<400> 140
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcagc agtagtgatt actactggag ctggatccgc 120
cagcacccag ggaagggcct ggagtggatt gggtacatct attacagtgg gagcacctac 180
tacaacccgt ccctcaagag tcgaattacc atatcagtag acacgtctaa gaacctgttc 240
tccctgaagt tgagctctgt gactgccgcg gacacggccg tgtattactg tgcgagaggg 300
ggggtgacta cgtactacta cgctatggac gtctggggcc aagggaccac ggtcaccgtc 360
tcctca 366

<210> 141
<211> 321
<212> DNA
<213> Homo sapiens

<400> 141
gacatacaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gcgcattagc aactatttaa gttggtatct gcagaaacca 120
gggattgccc ctaagctcct gatctatgct gcatccagtt tgcagagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaatct 240
gaagattttg caacttacta ctgtcaacag agttacagta ccccgctcat tttcggcgga 300
gggaccaagg tggagatcaa a 321

<210> 142
<211> 369
<212> DNA
<213> Homo sapiens

<400> 142
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtga taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagagact 300
ggtcccttga aactctacta ctacggtatg gacgtctggg gccaagggac cacggtcacc 360
gtctcctca 369

<210> 143
<211> 336
<212> DNA
<213> Homo sapiens

<400> 143
gatattgtga tgactcagtc tccactctcc ctgtccgtca cccctggaga gccgccctcc 60
atctcctgca ggtctagtca gagcctcctg catagtaatg gatacaactt tttgaattgg 120
tacctgcaga agccagggca gtctccacaa ctcctgatct atttgggttc tcatcgggcc 180
tccggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttac actggaaatc 240
agcagagtgg aggctgagga tgttggggtt tattactgca tgcaagttct acaaactcca 300
ttcactttcg gccctgggac caaagtggat atcaaa 336

<210> 144
<211> 357
<212> DNA
<213> Homo sapiens

<400> 144
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggGtc cctgagactc 60
tcctgtgcag cctctggact cacctttagt aacttttgga tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtggccaac ataaagcaag atggaagtga gaaatactat 180
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ttcactgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attcctgtac gagagagtca 300
aactggggat ttgcttttga tatctggggc caagggacaa tggtcaccgt ctcttca 357

<210> 145
<211> 327
<212> DNA
<213> Homo sapiens

<400> 145
cagtctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60
tcttgttctg gaagcagctc caacatcgga agtaaaactg taaactggta ccagcagttc 120
ccaggaacgg cccccaaact cctcatctat agtaataatc ggcggccctc aggggtccct 180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240
tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa ttgggtgttc 300
ggcgcaggga ccaagctgac cgtccta 327

<210> 146
<211> 345
<212> DNA
<213> Homo sapiens

<400> 146
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc agctatggta tcagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcagcactt acaatggtaa cacaaactat 180
gcacagaagg tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240
atggagctga ggagcctgag atctgacgac acggccgttt attactgtgc gagagggtat 300
actcgggact actggggcca gggaaccctg gtcaccgtct cctca 345

<210> 147
<211> 348
<212> DNA
<213> Homo sapiens

<400> 147
cagcctgtgc tgactcagcc acttttgca tcagcctccc tgggagcctc ggtcacactc 60
acctgcaccc tgagcagcgg ctacagtagt tatgaagtgg actggtatca gcagagacca 120
gggaagggcc cccggtttgt catgcgagtg gacactggtg ggattgtggg atccaagggg 180
gaaggcatcc ctgatcgctt ctcagttttg ggctcaggcc tgaatcggta tctgaccatc 240
aagaacatcc aggaagagga tgagagtgac taccactgtg gggcagacca tggcagtggg 300
accaacttcg tggtggtatt cggcggaggg accaagctga ccgtccta 348

<210> 148
<211> 348
<212> DNA
<213> Homo sapiens

<400> 148
caggtgcagc tacagcagtg gggcgcagga ctgttgaagc cttcggagac cctgtccctc 60
acctgcgctg tctatggtgg gtccttcagt gcgtactact ggaactggat ccgccagccc 120
ccagggaagg ggctggagtg gattggggaa atcaatcata gtggaagaac cgactacaac 180
ccgtccctca agagtcgagt caccatatca gtagacacgt ccaagaagca gttctccctg 240
aagctgaact ctgtgaccgc cgcggacacg gctgtgtatt actgtgcgag agggcagctc 300
gtccccttg actactgggg ccagggaacc ctggtcaccg tctcttca 348

<210> 149
<211> 330
<212> DNA
<213> Homo sapiens

<400> 149
cagtctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60
tcttgttctg gaagcagctc caacatcgga agtaatactg taaattggta tcagcaactc 120
ccaggaacgg cccccaaact cctcatctat agtaataatc agcggccctc aggggtccct 180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240
tctgaggatg aggctgatta ttactgtgca gtatgggatg acagcctgaa tggttgggtg 300
ttcggcggag ggaccaagct gaccgtccta 330

<210> 150
<211> 345
<212> DNA
<213> Homo sapiens

<400> 150
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60

tcctgcaagg cttctggtta cacctttccc agctatggta tcagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcagcgctt acaatggtaa cacaaactat 180
gcagagaagc tccagggcag agtcaccatg accacagaca catccacgag cacagcctac 240
atggaggtga ggagcctgag atctgacgac acggccgtgt tttactgtgc gagaggctac 300
gttatggacg tctggggcca agggaccacg gtcaccgtct cctct 345

<210> 151
<211> 327
<212> DNA
<213> Homo sapiens

<400> 151
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60
tcctgcactg gaaccagcag tgacgttggt cgttataatt ctgtctcctg gtaccaacac 120
cacccaggca aagcccccaa agtcatgatt tatgaggtca gtaatcggcc ctcaggggtt 180
tctactcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240
caggctgagg acgaggctga ttattactgc agctcatata caagcagcag cgttgtattc 300
ggcggaggga ccaaactgac cgtccta 327

<210> 152
<211> 369
<212> DNA
<213> Homo sapiens

<400> 152
gaggtgcagc tggtggagtc tgggggaggc ctggtcaagc ctgggggGtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagt agctatagca tgaactgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcatcc attagtagta gtagtagtta catttcctac 180
gcagactcag tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt atttctgtgc gagagattac 300
gatttttgga gtgcttacta tgatgctttt gatgtctggg gccaagggac aatggtcacc 360
gtctcttca 369

<210> 153
<211> 333
<212> DNA
<213> Homo sapiens

<400> 153
cagtctgtgc tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60
tcctgcactg ggagcagctc caacatcggg gcaggttatg atgtacactg gtaccagcag 120
cttccaggaa cagccccaa actcctcatc tctggtaaca gcaatcggcc ctcaggggtc 180
cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc 240
caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtggttcg 300
gtattcggcg gagggaccaa gctgaccgtc cta 333

<210> 154
<211> 326
<212> PRT
<213> Homo sapiens

<400> 154
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 1 5 10 15

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Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
65                  70                  75                  80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95
Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
            100                 105                 110
Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
        115                 120                 125
Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
    130                 135                 140
Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
145                 150                 155                 160
Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn
                165                 170                 175
Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
            180                 185                 190
Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
        195                 200                 205
Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
    210                 215                 220
Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
225                 230                 235                 240
Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
                245                 250                 255
Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
            260                 265                 270
Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
        275                 280                 285
Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
    290                 295                 300
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
305                 310                 315                 320
Ser Leu Ser Pro Gly Lys
                325
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<210> 155
<211> 327
<212> PRT
<213> Homo sapiens

<400> 155

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Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
 1               5                  10                  15
Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45
```

```
Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60
Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65                  70                  75                  80
Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95
Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro
            100                 105                 110
Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
        115                 120                 125
Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
    130                 135                 140
Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
145                 150                 155                 160
Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
                165                 170                 175
Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            180                 185                 190
Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
        195                 200                 205
Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    210                 215                 220
Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
225                 230                 235                 240
Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                245                 250                 255
Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            260                 265                 270
Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        275                 280                 285
Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
    290                 295                 300
Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
305                 310                 315                 320
Leu Ser Leu Ser Leu Gly Lys
                325
```

<210> 156
<211> 105
<212> PRT
<213> Homo sapiens

<400> 156

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Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu
 1               5                  10                  15
Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe
            20                  25                  30
Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val
        35                  40                  45
Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys
    50                  55                  60
Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser
65                  70                  75                  80
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```
His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu
                85                  90                  95
Lys Thr Val Ala Pro Thr Glu Cys Ser
            100                 105


<210> 157
<211> 106
<212> PRT
<213> Homo sapiens

<400> 157
Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
 1               5                  10                  15
Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
            20                  25                  30
Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
        35                  40                  45
Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
    50                  55                  60
Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
65                  70                  75                  80
His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
                85                  90                  95
Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
            100                 105


<210> 158
<211> 14
<212> PRT
<213> Homo sapiens

<400> 158
Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr Asn Ser Val Ser
 1               5                  10


<210> 159
<211> 14
<212> PRT
<213> Homo sapiens

<400> 159
Thr Gly Thr Asn Ser Asp Val Gly Gly Tyr Asn Ser Val Ser
 1               5                  10


<210> 160
<211> 14
<212> PRT
<213> Homo sapiens

<400> 160
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Thr Gly Thr Ser Ser Asp Val Gly Ala Tyr Asn Ser Val Ser
 1   5   10

<210> 161
<211> 14
<212> PRT
<213> Homo sapiens

<400> 161
Thr Gly Thr Ser Ser Asp Val Gly Arg Tyr Asn Ser Val Ser
 1   5   10

<210> 162
<211> 7
<212> PRT
<213> Homo sapiens

<400> 162
Glu Val Ser Asn Arg Pro Ser
 1   5

<210> 163
<211> 7
<212> PRT
<213> Homo sapiens

<400> 163
Glu Val Thr Asn Arg Pro Ser
 1   5

<210> 164
<211> 9
<212> PRT
<213> Homo sapiens

<400> 164
Ser Ser Tyr Thr Ser Thr Ser Met Val
 1   5

<210> 165
<211> 9
<212> PRT
<213> Homo sapiens

<400> 165
Asn Ser Tyr Thr Ser Thr Ser Met Val
 1   5

<210> 166
<211> 9
<212> PRT
<213> Homo sapiens

<400> 166
Ser Ser Tyr Thr Ser Thr Asn Met Val
 1   5

<210> 167
<211> 9
<212> PRT
<213> Homo sapiens

<400> 167
Ser Ser Tyr Thr Ser Ser Ser Val Val
 1   5

<210> 168
<211> 10
<212> PRT
<213> Homo sapiens

<400> 168
Gly Tyr Pro Leu Thr Ser Tyr Gly Ile Ser
 1   5   10

<210> 169
<211> 10
<212> PRT
<213> Homo sapiens

<400> 169
Gly Tyr Ser Leu Thr Ser Tyr Gly Ile Ser
 1   5   10

<210> 170
<211> 10
<212> PRT
<213> Homo sapiens

<400> 170
Gly Tyr Ala Leu Thr Ser Tyr Gly Ile Ser
 1   5   10

<210> 171
<211> 10
<212> PRT
<213> Homo sapiens

<400> 171
Gly Tyr Thr Leu Thr Ser Tyr Gly Ile Ser
 1   5   10

<210> 172
<211> 10
<212> PRT
<213> Homo sapiens

<400> 172
Gly Tyr Ser Phe Thr Ser Tyr Gly Ile Ser
 1   5   10

<210> 173
<211> 10
<212> PRT
<213> Homo sapiens

<400> 173
Gly Tyr Thr Phe Pro Ser Tyr Gly Ile Ser
 1   5   10

<210> 174
<211> 17
<212> PRT
<213> Homo sapiens

<400> 174
Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val Gln
 1   5   10   15
Gly

<210> 175
<211> 17
<212> PRT
<213> Homo sapiens

<400> 175
Trp Val Ser Phe Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu Gln
 1   5   10   15
Gly

<210> 176
<211> 17
<212> PRT
<213> Homo sapiens

<400> 176
Trp Ile Ser Phe Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val Gln
 1   5   10   15
Gly

<210> 177
<211> 17
<212> PRT
<213> Homo sapiens

<400> 177
Trp Ile Ser Val Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val Gln
 1   5   10   15
Gly

<210> 178
<211> 17
<212> PRT
<213> Homo sapiens

<400> 178
Trp Val Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Phe Gln
 1   5   10   15
Gly

<210> 179
<211> 17
<212> PRT
<213> Homo sapiens

<400> 179
Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Glu Lys Leu Gln
 1   5   10   15
Gly

<210> 180
<211> 6
<212> PRT
<213> Homo sapiens

<400> 180
Gly Tyr Gly Met Asp Val
 1   5

<210> 181
<211> 6
<212> PRT
<213> Homo sapiens

<400> 181
Gly Tyr Val Met Asp Val
 1   5

<210> 182
<211> 13
<212> PRT
<213> Homo sapiens

<400> 182
Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn Phe Val Ser
 1   5   10

<210> 183
<211> 7
<212> PRT
<213> Homo sapiens

<400> 183
Asp Tyr Asn Lys Arg Pro Ser
 1   5

<210> 184
<211> 7
<212> PRT
<213> Homo sapiens

<400> 184
Asp Ser Asn Lys Arg Pro Ser
 1   5

<210> 185
<211> 11
<212> PRT
<213> Homo sapiens

<400> 185
Gly Thr Trp Asp Ser Ser Leu Ser Gly Tyr Val
 1   5   10

<210> 186
<211> 11
<212> PRT
<213> Homo sapiens

<400> 186
Gly Thr Trp Asp Ser Ser Leu Ser Ala Tyr Val
 1   5   10

<210> 187
<211> 11
<212> PRT
<213> Homo sapiens

<400> 187
Gly Thr Trp Asp Ser Ser Leu Ser Ser Tyr Val
 1   5   10

<210> 188
<211> 10
<212> PRT
<213> Homo sapiens

<400> 188
Gly Phe Thr Phe Ser Ser Phe Gly Met His
 1   5   10

<210> 189
<211> 10
<212> PRT
<213> Homo sapiens

<400> 189
Gly Phe Thr Phe Asn Ser Phe Gly Met His
 1   5   10

<210> 190
<211> 10
<212> PRT
<213> Homo sapiens

<400> 190
Gly Phe Thr Phe Arg Ser Tyr Gly Met His
 1   5   10

<210> 191
<211> 17
<212> PRT
<213> Homo sapiens

<400> 191
Leu Ile Trp Asn Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys
 1   5   10   15

Gly

<210> 192
<211> 17
<212> PRT
<213> Homo sapiens

<400> 192
Leu Ile Trp Ser Asp Gly Ser Asp Glu Tyr Tyr Ala Asp Ser Val Lys
 1   5   10   15
Gly

<210> 193
<211> 17
<212> PRT
<213> Homo sapiens

<400> 193
Leu Ile Trp Ser Asp Gly Ser Asp Lys Tyr Tyr Ala Asp Ser Val Lys
 1   5   10   15
Gly

<210> 194
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<212> PRT
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<400> 194
Leu Ile Trp His Asp Gly Ser Asn Thr Tyr Tyr Val Asp Ser Val Lys
 1   5   10   15
Gly

<210> 195
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<400> 195
Ala Ile Ala Ala Leu Tyr Tyr Tyr Tyr Gly Met Asp Val
 1   5   10

<210> 196
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<400> 196
Gly Ile Ala Val Ala Tyr Tyr Tyr Tyr Gly Met Asp Val
 1   5   10

<210> 197
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<400> 197
Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn Thr Val Asn
 1   5   10

<210> 198
<211> 13
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<400> 198
Ser Gly Ser Ser Ser Asn Ile Gly Ser Lys Thr Val Asn
 1   5   10

<210> 199
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<400> 199
Ser Asn Asn Arg Arg Pro Ser
 1   5

<210> 200
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<400> 200
Arg Asn Asn Gln Arg Pro Leu
 1   5

<210> 201
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<400> 201
Ala Ala Trp Asp Asp Ser Leu Asn Trp Val
 1   5   10

<210> 202
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<400> 202
Gly Phe Thr Phe Ser Arg Tyr Trp Met Ser
 1   5   10

<210> 203
<211> 10
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<400> 203
Gly Leu Thr Phe Ser Asn Phe Trp Met Ser
 1   5   10

<210> 204
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<400> 204
Gly Phe Thr Phe Ser Ser Tyr Trp Met Ser
 1   5   10

<210> 205
<211> 17
<212> PRT
<213> Homo sapiens

<400> 205
Asn Ile Lys His Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val Lys
 1   5   10   15
Gly

<210> 206
<211> 17
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<400> 206
Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val Lys
 1   5   10   15
Gly

<210> 207
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<213> Homo sapiens

<400> 207
Glu Ser Asn Trp Gly Phe Ala Phe Asp Val
 1   5   10

<210> 208
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<400> 208
Glu Ser Asn Trp Gly Phe Ala Phe Asp Ile
 1   5   10

<210> 209
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<400> 209
Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn
 1   5   10

<210> 210
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<213> Homo sapiens

<400> 210
Arg Ala Ser Gln Ser Ile Ser Ile Tyr Leu Asn
 1   5   10

<210> 211
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<213> Homo sapiens

<400> 211
Ala Ala Ser Ser Leu Gln Ser
 1   5

<210> 212
<211> 7

<212> PRT
<213> Homo sapiens

<400> 212
Ala Ala Ala Ser Leu Gln Ser
 1   5

<210> 213
<211> 9
<212> PRT
<213> Homo sapiens

<400> 213
Gln Gln Ser Tyr Ser Ser Pro Ile Thr
 1   5

<210> 214
<211> 9
<212> PRT
<213> Homo sapiens

<400> 214
Gln Gln Ser Tyr Ser Ala Pro Ile Thr
 1   5

<210> 215
<211> 10
<212> PRT
<213> Homo sapiens

<400> 215
Gly Phe Thr Phe Ser Ser Tyr Ala Met Asn
 1   5   10

<210> 216
<211> 17
<212> PRT
<213> Homo sapiens

<400> 216
Thr Ile Ser Gly Ser Gly Asp Asn Thr Tyr Tyr Ala Asp Ser Val Lys
 1   5   10   15
Gly

<210> 217
<211> 17
<212> PRT
<213> Homo sapiens

<400> 217
Thr Ile Ser Gly Ser Gly Gly Asn Thr Tyr Tyr Ala Asp Ser Val Lys
 1   5   10   15
Gly

<210> 218
<211> 12
<212> PRT
<213> Homo sapiens

<400> 218
Lys Phe Val Leu Met Val Tyr Ala Met Leu Asp Tyr
 1   5   10

<210> 219
<211> 11
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<213> Homo sapiens

<400> 219
Arg Ala Ser Gln Arg Ile Ser Asn Tyr Leu Ser
 1   5   10

<210> 220
<211> 16
<212> PRT
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<400> 220
Arg Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Phe Leu Asn
 1   5   10   15

<210> 221
<211> 14
<212> PRT
<213> Homo sapiens

<400> 221
Thr Gly Thr Ser Ser Asp Val Gly Asn Tyr Asn Leu Val Ser
 1   5   10

<210> 222
<211> 14
<212> PRT
<213> Homo sapiens

<400> 222

Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly Tyr Asp Val His
 1   5   10

<210> 223
<211> 14
<212> PRT
<213> Homo sapiens

<400> 223
Thr Gly Ser Ser Ser Asn Ile Gly Ala His Tyr Asp Val His
 1   5   10

<210> 224
<211> 13
<212> PRT
<213> Homo sapiens

<400> 224
Ser Gly Ser Asn Ser Asn Ile Gly Asn Asn Tyr Val Ser
 1   5   10

<210> 225
<211> 11
<212> PRT
<213> Homo sapiens

<400> 225
Ser Gly Asp Lys Leu Gly Asp Lys Tyr Ala Cys
 1   5   10

<210> 226
<211> 12
<212> PRT
<213> Homo sapiens

<400> 226
Thr Leu Ser Ser Gly Tyr Ser Ser Tyr Glu Val Asp
 1   5   10

<210> 227
<211> 7
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<213> Homo sapiens

<400> 227
Leu Gly Ser His Arg Ala Ser
 1   5

<210> 228
<211> 7
<212> PRT
<213> Homo sapiens

<400> 228
Glu Val Ser Lys Arg Pro Ser
 1   5

<210> 229
<211> 7
<212> PRT
<213> Homo sapiens

<400> 229
Gly Asn Ser Asn Arg Pro Ser
 1   5

<210> 230
<211> 7
<212> PRT
<213> Homo sapiens

<400> 230
Gly Asn Thr Tyr Arg Pro Ser
 1   5

<210> 231
<211> 7
<212> PRT
<213> Homo sapiens

<400> 231
Ser Asn Asn Gln Arg Pro Ser
 1   5

<210> 232
<211> 7
<212> PRT
<213> Homo sapiens

<400> 232
Asp Asn Asn Lys Arg Pro Ser
 1   5

<210> 233
<211> 7
<212> PRT
<213> Homo sapiens

<400> 233
Gln Asn Thr Lys Trp Pro Leu
 1   5

<210> 234
<211> 7
<212> PRT
<213> Homo sapiens

<400> 234
Val Asp Thr Gly Gly Ile Val
 1   5

<210> 235
<211> 9
<212> PRT
<213> Homo sapiens

<400> 235
Gln Gln Ser Tyr Ser Thr Pro Leu Ile
 1   5

<210> 236
<211> 9
<212> PRT
<213> Homo sapiens

<400> 236
Met Gln Val Leu Gln Thr Pro Phe Thr
 1   5

<210> 237
<211> 10
<212> PRT
<213> Homo sapiens

<400> 237
Cys Ser Tyr Ala Gly Ser Ser Thr Leu Val
 1   5   10

<210> 238
<211> 11
<212> PRT
<213> Homo sapiens

<400> 238
Gln Ser Tyr Asp Ser Ser Leu Ser Gly Ser Val
 1   5   10

<210> 239
<211> 11
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<213> Homo sapiens

<400> 239
Gln Ser Tyr Asp Asn Ser Leu Ser Gly Val Val
 1   5   10

<210> 240
<211> 11
<212> PRT
<213> Homo sapiens

<400> 240
Ala Val Trp Asp Asp Ser Leu Asn Gly Trp Val
 1   5   10

<210> 241
<211> 11
<212> PRT
<213> Homo sapiens

<400> 241
Gly Thr Trp Asp Ser Ser Leu Ser Ala Val Val
 1   5   10

<210> 242
<211> 9
<212> PRT
<213> Homo sapiens

<400> 242
Gln Ala Trp Asp Ser Ser Thr Val Val
 1   5

<210> 243
<211> 18
<212> PRT
<213> Homo sapiens

<400> 243
Ser Asp Tyr His Cys Gly Ala Asp His Gly Ser Gly Thr Asn Phe Val
 1   5   10   15
Val Val

<210> 244
<211> 10
<212> PRT
<213> Homo sapiens

<400> 244
Gly Tyr Thr Phe Thr Ser Tyr Gly Ile Ser
 1   5   10

<210> 245
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<213> Homo sapiens

<400> 245
Gly Phe Thr Phe Ser Ser Tyr Ala Met Ser
 1   5   10

<210> 246
<211> 10
<212> PRT
<213> Homo sapiens

<400> 246
Gly Phe Thr Phe Ser Ser Tyr Gly Met His
 1   5   10

<210> 247
<211> 10
<212> PRT
<213> Homo sapiens

<400> 247
Gly Phe Thr Phe Ser Ser Tyr Ser Met Asn
 1   5   10

<210> 248
<211> 12
<212> PRT
<213> Homo sapiens

<400> 248
Gly Gly Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser
 1   5   10

<210> 249
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<213> Homo sapiens

<400> 249
Gly Gly Ser Ile Ser Ser Ser Asp Tyr Tyr Trp Ser
 1   5   10

<210> 250
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<213> Homo sapiens

<400> 250
Gly Gly Ser Phe Ser Ala Tyr Tyr Trp Asn
 1   5   10

<210> 251
<211> 12
<212> PRT
<213> Homo sapiens

<400> 251
Gly Asp Ser Val Ser Ser Asn Ser Ala Ala Trp Asn
 1   5   10

<210> 252
<211> 17
<212> PRT
<213> Homo sapiens

<400> 252
Trp Ile Ser Thr Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val Gln
 1   5   10   15
Gly

<210> 253
<211> 17
<212> PRT
<213> Homo sapiens

<400> 253
Thr Ile Ser Gly Ser Gly Gly Arg Thr Tyr Tyr Ala Asp Ser Val Lys
 1   5   10   15
Gly

<210> 254
<211> 17
<212> PRT
<213> Homo sapiens

<400> 254
Val Ile Trp Tyr Asp Gly Ser Asp Lys Tyr Tyr Ala Asp Ser Val Lys
 1   5   10   15
Gly

<210> 255
<211> 17
<212> PRT
<213> Homo sapiens

<400> 255
Ile Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys
 1   5   10   15
Gly

<210> 256
<211> 17
<212> PRT
<213> Homo sapiens

<400> 256
Ser Ile Ser Ser Ser Ser Ser Tyr Ile Ser Tyr Ala Asp Ser Val Lys
 1   5   10   15
Gly

<210> 257
<211> 16
<212> PRT
<213> Homo sapiens

<400> 257
Tyr Ile Tyr Asn Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys Ser
 1   5   10   15

<210> 258
<211> 16
<212> PRT
<213> Homo sapiens

<400> 258
Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys Ser
 1   5   10   15

<210> 259
<211> 16

<212> PRT
<213> Homo sapiens

<400> 259
Glu Ile Asn His Ser Gly Arg Thr Asp Tyr Asn Pro Ser Leu Lys Ser
 1   5   10   15

<210> 260
<211> 18
<212> PRT
<213> Homo sapiens

<400> 260
Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr Lys Asn Tyr Ser Val Ser Val
 1   5   10   15
Lys Ser

<210> 261
<211> 6
<212> PRT
<213> Homo sapiens

<400> 261
Gly Tyr Thr Arg Asp Tyr
 1   5

<210> 262
<211> 8
<212> PRT
<213> Homo sapiens

<400> 262
Glu Val Gly Ser Pro Phe Asp Tyr
 1   5

<210> 263
<211> 14
<212> PRT
<213> Homo sapiens

<400> 263
Glu Thr Gly Pro Leu Lys Leu Tyr Tyr Tyr Gly Met Asp Val
 1   5   10

<210> 264
<211> 13
<212> PRT
<213> Homo sapiens

<400> 264
Arg Gly Gly Leu Ala Ala Arg Pro Gly Gly Met Asp Val
 1   5   10

<210> 265
<211> 14
<212> PRT
<213> Homo sapiens

<400> 265
Asp Tyr Asp Phe Trp Ser Ala Tyr Tyr Asp Ala Phe Asp Val
 1   5   10

<210> 266
<211> 11
<212> PRT
<213> Homo sapiens

<400> 266
Glu Asp Thr Ala Met Val Pro Tyr Phe Asp Tyr
 1   5   10

<210> 267
<211> 12
<212> PRT
<213> Homo sapiens

<400> 267
Gly Gly Val Thr Thr Tyr Tyr Tyr Ala Met Asp Val
 1   5   10

<210> 268
<211> 8
<212> PRT
<213> Homo sapiens

<400> 268
Gly Gln Leu Val Pro Phe Asp Tyr
 1   5

<210> 269
<211> 9
<212> PRT
<213> Homo sapiens

<400> 269
Gly Gly Pro Thr Ala Ala Phe Asp Tyr
 1   5

<210> 270
<211> 109
<212> PRT
<213> Homo sapiens

<400> 270
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20   25   30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
        35   40   45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Phe Asn Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Tyr Thr Ser Thr
                85   90   95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 271
<211> 109
<212> PRT
<213> Homo sapiens

<400> 271
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Phe Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Ala Tyr
            20   25   30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Arg
        35   40   45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Thr
                85   90   95
Asn Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 272
<211> 109
<212> PRT
<213> Homo sapiens

<400> 272
Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Pro Pro Gly Gln
 1   5   10   15

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Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
            20                  25                  30
Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35                  40                  45
Ile Tyr Ser Asn Asn Arg Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
    50                  55                  60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65                  70                  75                  80
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
                85                  90                  95
Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
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<210> 273
<211> 109
<212> PRT
<213> Homo sapiens

<400> 273

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Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Pro Pro Gly Gln
 1               5                  10                  15
Arg Val Thr Ile Phe Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
            20                  25                  30
Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35                  40                  45
Ile Tyr Ser Asn Asn Arg Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
    50                  55                  60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65                  70                  75                  80
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
                85                  90                  95
Asn Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
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<210> 274
<211> 106
<212> PRT
<213> Homo sapiens

<400> 274

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Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
 1               5                  10                  15
Thr Ala Ser Ile Thr Cys Ser Gly Asp Lys Leu Gly Asp Lys Tyr Ala
            20                  25                  30
Cys Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr
        35                  40                  45
Gln Asp Ser Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
    50                  55                  60
Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met
65                  70                  75                  80
Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Thr Val Val
                85                  90                  95
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Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 275
<211> 106
<212> PRT
<213> Homo sapiens

<400> 275
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
1 5 10 15
Thr Ala Arg Ile Thr Cys Ser Gly Asp Lys Leu Gly Asp Lys Tyr Ala
20 25 30
Cys Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr
35 40 45
Gln Asn Thr Lys Trp Pro Leu Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60
Lys Ser Gly Asn Thr Val Thr Leu Thr Ile Ser Gly Thr Gln Ala Met
65 70 75 80
Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Thr Val Val
85 90 95
Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 276
<211> 107
<212> PRT
<213> Homo sapiens

<400> 276
Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
1 5 10 15
Thr Ala Ser Ile Thr Cys Ser Gly Asp Lys Leu Gly Asp Lys Tyr Ala
20 25 30
Cys Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Val Leu Val Ile Tyr
35 40 45
Gln Asp Ser Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60
Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met
65 70 75 80
Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Thr Ala Val
85 90 95
Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 277
<211> 107
<212> PRT
<213> Homo sapiens

<400> 277

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Ser Tyr Glu Leu Ile Gln Pro Pro Ser Val Ser Val Ser Pro Gly Gln
 1               5                  10                  15
Thr Ala Ser Ile Thr Cys Ser Gly Asp Lys Leu Gly Asp Lys Tyr Ala
            20                  25                  30
Cys Trp Tyr Gln Arg Lys Pro Gly Gln Ser Pro Ile Leu Val Ile Tyr
        35                  40                  45
Gln Asp Thr Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
    50                  55                  60
Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Met
65                  70                  75                  80
Asp Glu Ala Asp Tyr Tyr Cys Gln Ala Trp Asp Ser Ser Thr Ala Val
                85                  90                  95
Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
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<210> 278
<211> 120
<212> PRT
<213> Homo sapiens

<400> 278

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Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
 1               5                  10                  15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Thr Tyr
            20                  25                  30
Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
        35                  40                  45
Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
    50                  55                  60
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65                  70                  75                  80
Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
                85                  90                  95
Arg Gly Ser Tyr Ser Ser Gly Trp Phe Glu Phe Asp Tyr Trp Gly Gln
            100                 105                 110
Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 279
<211> 12
<212> PRT
<213> Homo sapiens

<400> 279

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Thr Leu Ser Ser Gly Tyr Ser Ser Tyr Glu Val Asp
 1               5                  10
```

<210> 280
<211> 12
<212> PRT
<213> Homo sapiens

<400> 280
Val Asp Thr Gly Gly Ile Val Gly Ser Lys Gly Glu
 1   5   10

<210> 281
<211> 13
<212> PRT
<213> Homo sapiens

<400> 281
Gly Ala Asp His Gly Ser Gly Thr Asn Phe Val Val Val
 1   5   10

<210> 282
<211> 22
<212> PRT
<213> Homo sapiens

<400> 282
Gln Pro Val Leu Thr Gln Pro Leu Phe Ala Ser Ala Ser Leu Gly Ala
 1   5   10   15
Ser Val Thr Leu Thr Cys
            20

<210> 283
<211> 15
<212> PRT
<213> Homo sapiens

<400> 283
Trp Tyr Gln Gln Arg Pro Gly Lys Gly Pro Arg Phe Val Met Arg
 1   5   10   15

<210> 284
<211> 32
<212> PRT
<213> Homo sapiens

<400> 284
Gly Ile Pro Asp Arg Phe Ser Val Leu Gly Ser Gly Leu Asn Arg Tyr
 1   5   10   15
Leu Thr Ile Lys Asn Ile Gln Glu Glu Asp Glu Ser Asp Tyr His Cys
            20   25   30

<210> 285
<211> 10
<212> PRT
<213> Homo sapiens

<400> 285
Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
 1   5   10

<210> 286
<211> 108
<212> PRT
<213> Homo sapiens

<400> 286
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Arg Tyr
            20   25   30
Asn Ser Val Ser Trp Tyr Gln His His Pro Gly Lys Ala Pro Lys Val
        35   40   45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Thr Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr Ser Ser
                85   90   95
Ser Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val
            100   105

<210> 287
<211> 108
<212> PRT
<213> Homo sapiens

<400> 287
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20   25   30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Pro Pro Lys Leu
        35   40   45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Ile Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ser Ser Tyr Thr Ser Thr
                85   90   95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val
            100   105

<210> 288
<211> 108
<212> PRT
<213> Homo sapiens

<400> 288
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Asn Ser Asp Val Gly Gly Tyr
            20   25   30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Pro Pro Lys Leu
        35   40   45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Ile Ser Asn Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ser Ser Tyr Thr Ser Thr
                85   90   95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val
            100   105

<210> 289
<211> 122
<212> PRT
<213> Homo sapiens

<400> 289
Gln Val His Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Leu Ile Trp Asn Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Ala Ile Ala Ala Leu Tyr Tyr Tyr Tyr Gly Met Asp Val Trp
            100   105   110
Gly His Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 290
<211> 122
<212> PRT
<213> Homo sapiens

<400> 290
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Cys Val
        35   40   45

```
Ala Ile Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Arg Gly Gly Leu Ala Ala Arg Pro Gly Gly Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 291
<211> 121
<212> PRT
<213> Homo sapiens

<400> 291

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Leu Ile Trp Asn Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Ala Ile Ala Ala Leu Tyr Tyr Tyr Tyr Gly Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser
        115                 120
```

<210> 292
<211> 119
<212> PRT
<213> Homo sapiens

<400> 292

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Ile Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
```

Ala Arg Arg Gly Gly Leu Pro Gly Gly Met Asp Val Trp Gly Gln Gly
100 105 110
Thr Thr Val Thr Val Ser Ser
115

<210> 293
<211> 327
<212> DNA
<213> Homo sapiens

<400> 293
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60
tcctgcactg gaaccagcag tgacgttggt ggttataact ctgtctcctg gtaccaacag 120
cacccaggca aagcccccaa actcatgatt tatgaggtca gtaatcggcc ctcaggggtt 180
tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240
caggctgagg acgaggctga ttattactgc aactcatata caagcaccag catggtattc 300
ggcggaggga ccaagctgac cgtccta 327

<210> 294
<211> 327
<212> DNA
<213> Homo sapiens

<400> 294
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60
tcctgcactg gaaccagcag tgacgttggt ggttataact ctgtctcctg gtaccaacag 120
cacccaggca aacccccaa actcatgatt tatgaggtca gtaatcggcc ctcaggggtt 180
tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240
caggctgagg acgaggctga ttatttctgc agctcatata caagcaccag catggtcttc 300
ggcggaggga ccaagctgac cgtccta 327

<210> 295
<211> 318
<212> DNA
<213> Homo sapiens

<400> 295
tcctatgagc tgactcagcc accctcagtg tccgtgtccc caggacagac agccagaatc 60
acctgctctg gagataaatt gggggataaa tatgcttgct ggtatcagca gaagccaggc 120
cagtcccctg tgctggtcat ctatcaaaat accaagtggc ccttagggat ccctgagcga 180
ttctctggct ccaagtctgg gaacacagtc actctgacca tcagcgggac ccaggctatg 240
gatgaggctg actattactg tcaggcgtgg gacagcagca ctgtggtatt cggcggaggg 300
accaagctga ccgtccta 318

<210> 296
<211> 327
<212> DNA
<213> Homo sapiens

<400> 296
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60
tcctgcactg gaaccagcag tgacgttggt ggttataact ctgtctcctg gtaccaacag 120
cacccaggca aagcccccaa actcatgatt tatgaggtca gtaatcggcc ctcaggggtt 180

tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240
caggctgagg acgaggctga ttattactgc aattcatata caagcaccag catggtattc 300
ggcggaggga ccaagctgac cgtccta 327

<210> 297
<211> 215
<212> PRT
<213> Homo sapiens

<400> 297
Glu Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20   25   30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
        35   40   45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Tyr Thr Ser Thr
                85   90   95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln Pro
            100   105   110
Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu Leu
        115   120   125
Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr Pro
    130   135   140
Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys Ala
145   150   155   160
Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala
                165   170   175
Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His Arg
            180   185   190
Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys Thr
        195   200   205
Val Ala Pro Thr Glu Cys Ser
    210   215

<210> 298
<211> 230
<212> PRT
<213> Homo sapiens

<400> 298
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Leu Thr Ser Tyr
            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Val Ser Phe Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu
    50   55   60

```
Gln Gly Arg Gly Thr Met Thr Thr Asp Pro Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
            100                 105                 110
Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
        115                 120                 125
Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
    130                 135                 140
Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
145                 150                 155                 160
Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
                165                 170                 175
Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly
            180                 185                 190
Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
        195                 200                 205
Val Asp Lys Lys Val Glu Pro Lys Ser Cys Ala Ala Asp Glu Val Asp
    210                 215                 220
His His His His His His
225                 230
```

<210> 299
<211> 217
<212> PRT
<213> Homo sapiens

<400> 299

```
Glu Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
 1               5                  10                  15
Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly
            20                  25                  30
Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
        35                  40                  45
Leu Ile Ser Gly Asn Ser Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
                85                  90                  95
Leu Ser Gly Ser Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
            100                 105                 110
Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu
        115                 120                 125
Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe
    130                 135                 140
Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val
145                 150                 155                 160
Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys
                165                 170                 175
Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser
            180                 185                 190
```

```
His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu
        195                 200                 205
Lys Thr Val Ala Pro Thr Glu Cys Ser
    210                 215
```

<210> 300
<211> 238
<212> PRT
<213> Homo sapiens

<400> 300

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Ser Ile Ser Ser Ser Ser Ser Tyr Ile Ser Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Phe Cys
                85                  90                  95
Ala Arg Asp Tyr Asp Phe Trp Ser Ala Tyr Tyr Asp Ala Phe Asp Val
            100                 105                 110
Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Ala Ser Thr Lys Gly
        115                 120                 125
Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly
    130                 135                 140
Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val
145                 150                 155                 160
Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe
                165                 170                 175
Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val
            180                 185                 190
Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val
        195                 200                 205
Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys
    210                 215                 220
Ser Cys Ala Ala Asp Glu Val Asp His His His His His His
225                 230                 235
```

<210> 301
<211> 218
<212> PRT
<213> Homo sapiens

<400> 301

```
Ala Leu Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro
 1               5                  10                  15
Gly Gln Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly
            20                  25                  30
```

```
Ser Asn Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys
        35                  40                  45
Leu Leu Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg
    50                  55                  60
Phe Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly
65                  70                  75                  80
Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Val Trp Asp Asp
                85                  90                  95
Ser Leu Asn Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
Gly Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser
        115                 120                 125
Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp
    130                 135                 140
Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro
145                 150                 155                 160
Val Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn
                165                 170                 175
Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys
            180                 185                 190
Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val
        195                 200                 205
Glu Lys Thr Val Ala Pro Thr Glu Cys Ser
    210                 215


<210> 302
<211> 231
<212> PRT
<213> Homo sapiens

<400> 302
Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu Lys Pro Ser Glu
 1               5                  10                  15
Thr Leu Ser Leu Thr Cys Ala Val Tyr Gly Gly Ser Phe Ser Ala Tyr
            20                  25                  30
Tyr Trp Asn Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
        35                  40                  45
Gly Glu Ile Asn His Ser Gly Arg Thr Asp Tyr Asn Pro Ser Leu Lys
    50                  55                  60
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Lys Gln Phe Ser Leu
65                  70                  75                  80
Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
                85                  90                  95
Arg Gly Gln Leu Val Pro Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val
            100                 105                 110
Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala
        115                 120                 125
Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu
    130                 135                 140
Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly
145                 150                 155                 160
Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser
                165                 170                 175
```

```
Gly Leu Tyr Ser His Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu
            180                 185                 190
Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr
        195                 200                 205
Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Ala Ala Asp Glu Val
    210                 215                 220
Asp His His His His His His
225                 230
```

<210> 303
<211> 680
<212> PRT
<213> Homo sapiens

<400> 303

```
Gln Glu Asp Glu Asp Gly Asp Tyr Glu Glu Leu Val Leu Ala Leu Arg
 1               5                  10                  15
Ser Glu Glu Asp Gly Leu Ala Glu Ala Pro Glu His Gly Thr Thr Ala
            20                  25                  30
Thr Phe His Arg Cys Ala Lys Asp Pro Trp Arg Leu Pro Gly Thr Tyr
        35                  40                  45
Val Val Val Leu Lys Glu Glu Thr His Leu Ser Gln Ser Glu Arg Thr
    50                  55                  60
Ala Arg Arg Leu Gln Ala Gln Ala Ala Arg Arg Gly Tyr Leu Thr Lys
65                  70                  75                  80
Ile Leu His Val Phe His Gly Leu Leu Pro Gly Phe Leu Val Lys Met
                85                  90                  95
Ser Gly Asp Leu Leu Glu Leu Ala Leu Lys Leu Pro His Val Asp Tyr
            100                 105                 110
Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu
        115                 120                 125
Glu Arg Ile Thr Pro Pro Arg Tyr Arg Ala Asp Glu Tyr Gln Pro Pro
    130                 135                 140
Asp Gly Gly Ser Leu Val Glu Val Tyr Leu Leu Asp Thr Ser Ile Gln
145                 150                 155                 160
Ser Asp His Arg Glu Ile Glu Gly Arg Val Met Val Thr Asp Phe Glu
                165                 170                 175
Asn Val Pro Glu Glu Asp Gly Thr Arg Phe His Arg Gln Ala Ser Lys
            180                 185                 190
Cys Asp Ser His Gly Thr His Leu Ala Gly Val Val Ser Gly Arg Asp
        195                 200                 205
Ala Gly Val Ala Lys Gly Ala Ser Met Arg Ser Leu Arg Val Leu Asn
    210                 215                 220
Cys Gln Gly Lys Gly Thr Val Ser Gly Thr Leu Ile Gly Leu Glu Phe
225                 230                 235                 240
Ile Arg Lys Ser Gln Leu Val Gln Pro Val Gly Pro Leu Val Val Leu
                245                 250                 255
Leu Pro Leu Ala Gly Gly Tyr Ser Arg Val Leu Asn Ala Ala Cys Gln
            260                 265                 270
Arg Leu Ala Arg Ala Gly Val Val Leu Val Thr Ala Ala Gly Asn Phe
        275                 280                 285
Arg Asp Asp Ala Cys Leu Tyr Ser Pro Ala Ser Ala Pro Glu Val Ile
    290                 295                 300
```

```
Thr Val Gly Ala Thr Asn Ala Gln Asp Gln Pro Val Thr Leu Gly Thr
305                 310                 315                 320
Leu Gly Thr Asn Phe Gly Arg Cys Val Asp Leu Phe Ala Pro Gly Glu
                325                 330                 335
Asp Ile Ile Gly Ala Ser Ser Asp Cys Ser Thr Cys Phe Val Ser Gln
            340                 345                 350
Ser Gly Thr Ser Gln Ala Ala Ala His Val Ala Gly Ile Ala Ala Met
        355                 360                 365
Met Leu Ser Ala Glu Pro Glu Leu Thr Leu Ala Glu Leu Arg Gln Arg
    370                 375                 380
Leu Ile His Phe Ser Ala Lys Asp Val Ile Asn Glu Ala Trp Phe Pro
385                 390                 395                 400
Glu Asp Gln Arg Val Leu Thr Pro Asn Leu Val Ala Ala Leu Pro Pro
                405                 410                 415
Ser Thr His Gly Ala Gly Trp Gln Leu Phe Cys Arg Thr Val Trp Ser
            420                 425                 430
Ala His Ser Gly Pro Thr Arg Met Ala Thr Ala Ile Ala Arg Cys Ala
        435                 440                 445
Pro Asp Glu Glu Leu Leu Ser Cys Ser Ser Phe Ser Arg Ser Gly Lys
    450                 455                 460
Arg Arg Gly Glu Arg Met Glu Ala Gln Gly Gly Lys Leu Val Cys Arg
465                 470                 475                 480
Ala His Asn Ala Phe Gly Gly Glu Gly Val Tyr Ala Ile Ala Arg Cys
                485                 490                 495
Cys Leu Leu Pro Gln Ala Asn Cys Ser Val His Thr Ala Pro Pro Ala
            500                 505                 510
Glu Ala Ser Met Gly Thr Arg Val His Cys His Gln Gln Gly His Val
        515                 520                 525
Leu Thr Gly Cys Ser Ser His Trp Glu Val Glu Asp Leu Gly Thr His
    530                 535                 540
Lys Pro Pro Val Leu Arg Pro Arg Gly Gln Pro Asn Gln Cys Val Gly
545                 550                 555                 560
His Arg Glu Ala Ser Ile His Ala Ser Cys Cys His Ala Pro Gly Leu
                565                 570                 575
Glu Cys Lys Val Lys Glu His Gly Ile Pro Ala Pro Gln Glu Gln Val
            580                 585                 590
Thr Val Ala Cys Glu Glu Gly Trp Thr Leu Thr Gly Cys Ser Ala Leu
        595                 600                 605
Pro Gly Thr Ser His Val Leu Gly Ala Tyr Ala Val Asp Asn Thr Cys
    610                 615                 620
Val Val Arg Ser Arg Asp Val Ser Thr Thr Gly Ser Thr Ser Glu Glu
625                 630                 635                 640
Ala Val Thr Ala Val Ala Ile Cys Cys Arg Ser Arg His Leu Ala Gln
                645                 650                 655
Ala Ser Gln Glu Leu Gln Gly Ser Ser Asp Tyr Lys Asp Asp Asp Lys
            660                 665                 670
His His His His His His His His
        675                 680
```

<210> 304
<211> 680
<212> PRT
<213> Homo sapiens

<400> 304

```
Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg Leu Arg Arg Arg
 1               5                  10                  15
Arg Arg Arg Arg Arg Arg Arg Arg Arg Arg His Arg Arg Arg Arg
            20                  25                  30
Arg Phe Arg Arg Cys Arg Arg Arg Pro Trp Arg Arg Pro Gly Arg Tyr
        35                  40                  45
Val Val Val Leu Arg Arg Arg Arg Arg Arg Ser Arg Ser Arg Glu Thr
    50                  55                  60
Ala Glu Glu Leu Gln Arg Arg Ala Arg Glu Glu Gly Arg Arg Thr Lys
65                  70                  75                  80
Ile Arg Arg Arg Phe Arg Gly Leu Leu Pro Gly Phe Leu Val Arg Met
                85                  90                  95
Arg Arg Arg Leu Arg Arg Leu Ala Arg Arg Leu Pro Arg Val Arg Tyr
            100                 105                 110
Ile Glu Glu Asp Ser Ser Val Phe Arg Gln Arg Ile Pro Arg Asn Arg
        115                 120                 125
Arg Glu Ile Arg Pro Pro Arg Tyr Arg Ala Arg Arg Arg Arg Pro Pro
    130                 135                 140
Arg Gly Gly Arg Arg Val Glu Val Tyr Leu Leu Asp Thr Arg Ile Arg
145                 150                 155                 160
Arg Arg His Glu Glu Ile Arg Gly Arg Val Arg Arg Arg Arg Phe Arg
                165                 170                 175
Arg Arg Pro Arg Arg Arg Arg Arg Glu Arg Glu Glu Arg Arg Arg Arg
            180                 185                 190
Cys Asp Arg Arg Gly Thr His Leu Ala Gly Val Val Ser Gly Glu Arg
        195                 200                 205
Ala Gly Val Ala Arg Arg Ala Arg Met Arg Ser Leu Glu Val Leu Asn
    210                 215                 220
Cys Arg Gly Arg Gly Arg Val Ser Gly Thr Leu Ile Gly Leu Glu Arg
225                 230                 235                 240
Ile Glu Arg Arg Arg Arg Arg Arg Pro Arg Arg Pro Leu Val Val Leu
                245                 250                 255
Leu Pro Leu Ala Gly Arg Tyr Ser Glu Val Leu Asn Arg Ala Cys Arg
            260                 265                 270
Arg Leu Ala Glu Arg Gly Val Val Leu Val Thr Ala Ala Gly Asn Phe
        275                 280                 285
Glu Asp Asp Ala Cys Arg Tyr Ser Pro Ala Arg Ala Pro Glu Val Ile
    290                 295                 300
Thr Val Gly Ala Thr Asn Arg Arg Arg Arg Pro Val Arg Arg Gly Arg
305                 310                 315                 320
Arg Gly Thr Asn Phe Gly Arg Cys Val Asp Leu Phe Ala Pro Gly Arg
                325                 330                 335
Arg Ile Ile Gly Ala Ser Ser Arg Cys Ser Arg Cys Arg Arg Arg Arg
            340                 345                 350
Ser Gly Thr Ser Gln Ala Ala Ala His Val Ala Gly Ile Ala Ala Arg
        355                 360                 365
Met Leu Arg Arg Arg Pro Arg Leu Arg Arg Ala Arg Leu Arg Gln Glu
    370                 375                 380
Leu Arg Arg Arg Ser Arg Arg Arg Arg Ile Arg Arg Arg Arg Phe Pro
385                 390                 395                 400
Arg Arg Arg Glu Arg Leu Thr Pro Arg Leu Val Ala Arg Leu Pro Pro
                405                 410                 415
```

```
Arg Arg Arg Arg Arg Gly Arg Arg Leu Phe Cys Arg Thr Val Trp Ser
            420                 425                 430
Arg Arg Ser Gly Pro Arg Glu Arg Ala Arg Ala Ile Ala Glu Cys Ala
        435                 440                 445
Pro Arg Glu Glu Leu Leu Ser Cys Ser Ser Phe Ser Arg Ser Gly Lys
    450                 455                 460
Arg Arg Gly Glu Arg Met Glu Arg Gln Gly Gly Lys Leu Val Cys Arg
465                 470                 475                 480
Ala His Asn Ala Arg Arg Gly Arg Gly Val Tyr Ala Ile Ala Arg Cys
                485                 490                 495
Cys Leu Leu Pro Gln Ala Arg Cys Ser Val His Arg Ala Pro Pro Ala
            500                 505                 510
Arg Arg Arg Arg Gly Thr Glu Val Arg Cys Arg Arg Arg Gly His Val
        515                 520                 525
Leu Thr Gly Cys Ser Ser His Trp Arg Arg Arg Asp Arg Gly Thr Arg
    530                 535                 540
Lys Pro Pro Arg Leu Arg Pro Glu Gly Arg Pro Arg Gln Cys Val Gly
545                 550                 555                 560
His Arg Glu Ala Ser Ile His Ala Ser Cys Cys His Ala Pro Gly Leu
                565                 570                 575
Glu Cys Arg Arg Arg Arg Arg Arg Ile Pro Ala Pro Arg Glu Arg Val
            580                 585                 590
Thr Val Arg Cys Arg Arg Gly Trp Thr Leu Thr Gly Cys Ser Ala Leu
        595                 600                 605
Pro Gly Thr Ser His Val Leu Gly Ala Tyr Ala Arg Asp Asn Thr Cys
    610                 615                 620
Val Val Arg Ser Glu Asp Arg Arg Arg Arg Arg Arg Arg Arg Arg Glu
625                 630                 635                 640
Arg Val Thr Ala Val Ala Ile Cys Cys Glu Ser Glu His Leu Ala Gln
                645                 650                 655
Ala Ser Gln Glu Leu Gln Gly Ser Ser Asp Tyr Lys Asp Asp Asp Lys
            660                 665                 670
His His His His His His His His
        675                 680


<210> 305
<211> 14
<212> PRT
<213> Homo sapiens

<400> 305
Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr Asn Ser Val Ser
 1               5                  10


<210> 306
<211> 7
<212> PRT
<213> Homo sapiens

<400> 306
Glu Val Ser Asn Arg Pro Ser
 1               5
```

<210> 307
<211> 9
<212> PRT
<213> Homo sapiens

<400> 307
Ser Ser Tyr Thr Ser Thr Ser Met Val
 1   5

<210> 308
<211> 5
<212> PRT
<213> Homo sapiens

<400> 308
Ser Tyr Gly Ile Ser
 1   5

<210> 309
<211> 17
<212> PRT
<213> Homo sapiens

<400> 309
Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val Gln
 1   5   10   15
Gly

<210> 310
<211> 6
<212> PRT
<213> Homo sapiens

<400> 310
Gly Tyr Gly Met Asp Val
 1   5

<210> 311
<211> 14
<212> PRT
<213> Homo sapiens

<400> 311
Thr Gly Thr Ser Ser Asp Val Gly Arg Tyr Asn Ser Val Ser
 1   5   10

<210> 312
<211> 7
<212> PRT
<213> Homo sapiens

<400> 312
Glu Val Ser Asn Arg Pro Ser
 1   5

<210> 313
<211> 9
<212> PRT
<213> Homo sapiens

<400> 313
Ser Ser Tyr Thr Ser Ser Ser Val Val
 1   5

<210> 314
<211> 17
<212> PRT
<213> Homo sapiens

<400> 314
Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Glu Lys Leu Gln
 1   5   10   15
Gly

<210> 315
<211> 6
<212> PRT
<213> Homo sapiens

<400> 315
Gly Tyr Val Met Asp Val
 1   5

<210> 316
<211> 14
<212> PRT
<213> Homo sapiens

<400> 316
Thr Gly Thr Ser Ser Asp Val Gly Ala Tyr Asn Ser Val Ser
 1   5   10

<210> 317
<211> 9

<212> PRT
<213> Homo sapiens

<400> 317
Ser Ser Tyr Thr Ser Thr Asn Met Val
 1   5

<210> 318
<211> 17
<212> PRT
<213> Homo sapiens

<400> 318
Trp Val Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Phe Gln
 1   5   10   15
Gly

<210> 319
<211> 9
<212> PRT
<213> Homo sapiens

<400> 319
Asn Ser Tyr Thr Ser Thr Ser Met Val
 1   5

<210> 320
<211> 17
<212> PRT
<213> Homo sapiens

<400> 320
Trp Val Ser Phe Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu Gln
 1   5   10   15
Gly

<210> 321
<211> 7
<212> PRT
<213> Homo sapiens

<400> 321
Glu Val Thr Asn Arg Pro Ser
 1   5

<210> 322
<211> 14

<212> PRT
<213> Homo sapiens

<400> 322
Thr Gly Thr Asn Ser Asp Val Gly Gly Tyr Asn Ser Val Ser
 1   5   10

<210> 323
<211> 17
<212> PRT
<213> Homo sapiens

<400> 323
Trp Ile Ser Val Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val Gln
 1   5   10   15
Gly

<210> 324
<211> 17
<212> PRT
<213> Homo sapiens

<400> 324
Trp Ile Ser Phe Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Val Gln
 1   5   10   15
Gly

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Gly

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Gly

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Tyr Trp Met Ser
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Gly

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Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr
            20   25   30
Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
        35   40   45

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Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
    50                  55                  60
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65                  70                  75                  80
Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
                85                  90                  95
Arg Tyr Ser Ser Gly Trp Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val
            100                 105                 110
Thr Val Ser Ser
        115
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            20                  25                  30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Glu Ser Asn Trp Gly Phe Ala Phe Asp Ile Trp Gly Gln Gly
            100                 105                 110
Thr Met Val Thr Val Ser
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<400> 402

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
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Thr Val Ser
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<223> Xaa=D or no amino acid

<220>
<221> VARIANT
<222> 2
<223> Xaa=Y, A or no amino acid

<220>
<221> VARIANT
<222> 3
<223> Xaa=D, I or no amino acid

<220>
<221> VARIANT
<222> 4
<223> Xaa=F, A or no amino acid

<220>
<221> VARIANT
<222> 5
<223> Xaa=W, A or no amino acid

<220>
<221> VARIANT
<222> 6
<223> Xaa=S, L or no amino acid

<220>
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<222> (7)...(7)
<223> Xaa=A, Y, G or no amino acid

<220>
<221> VARIANT
<222> (8)...(8)
<223> Xaa=Y, Q or no amino acid

<220>
<221> VARIANT
<222> (9)...(9)
<223> Xaa=G, Y or L

<220>
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<222> (10)...(10)
<223> Xaa=Y, D or V

<220>
<221> VARIANT
<222> (11)...(11)
<223> Xaa=G, A or P

<220>
<221> VARIANT
<222> (12)...(12)
<223> Xaa=M or F

<220>
<221> VARIANT
<222> (13)...(13)
<223> Xaa=D

<220>
<221> VARIANT
<222> (14)...(14)
<223> Xaa=V or Y

<400> 410
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 411
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 1
<223> Xaa=Q, A, G or no amino acid

<220>
<221> VARIANT
<222> 2
<223> Xaa=S, V, T or no amino acid

<220>
<221> VARIANT
<222> 3
<223> Xaa=Y, N or W

<220>
<221> VARIANT
<222> 4
<223> Xaa=S or D

<220>
<221> VARIANT
<222> 5
<223> Xaa=S, Y or D

<220>
<221> VARIANT
<222> 6
<223> Xaa=S or T

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa=L or S

<220>
<221> VARIANT
<222> (8)...(8)
<223> Xaa=S, T or N

<220>
<221> VARIANT
<222> (9)...(9)
<223> Xaa=G, S or A

<220>
<221> VARIANT
<222> (10)...(10)
<223> Xaa=S, M, W or Y

<220>
<221> VARIANT
<222> (11)...(11)
<223> Xaa=V

<400> 411
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 412
<211> 10

<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 1
<223> Xaa=G, P or A

<220>
<221> VARIANT
<222> 2
<223> Xaa=Y, W, F, T or S

<220>
<221> VARIANT
<222> 3
<223> Xaa=T, P, S, A, C, V, L or I

<220>
<221> VARIANT
<222> 4
<223> Xaa=L, F, I, V, M, A or Y

<220>
<221> VARIANT
<222> 5
<223> Xaa=T, P, S or A

<220>
<221> VARIANT
<222> 6
<223> Xaa=S, T, A or C

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa=Y, W, F, T or S

<220>
<221> VARIANT
<222> (8)...(8)
<223> Xaa=G, P or A

<220>
<221> VARIANT
<222> (9)...(9)
<223> Xaa=I, L, V, M, A or F

<220>

<221> VARIANT
<222> (10)...(10)
<223> Xaa=S, T, A or C

<400> 412
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 413
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 1
<223> Xaa=T or S

<220>
<221> VARIANT
<222> 2
<223> Xaa=G, P or A

<220>
<221> VARIANT
<222> 3
<223> Xaa=T or S

<220>
<221> VARIANT
<222> 4
<223> Xaa=S, N, T, A, C or Q

<220>
<221> VARIANT
<222> 5
<223> Xaa=S, T, A or C

<220>
<221> VARIANT
<222> 6
<223> Xaa=D or E

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa=V, I, M, L, F or A

<220>
<221> VARIANT

<222> (8)...(8)
<223> Xaa=G, P or A

<220>
<221> VARIANT
<222> (9)...(9)
<223> Xaa=G, A, R, P, V, L, I, K, Q or N

<220>
<221> VARIANT
<222> (10)...(10)
<223> Xaa=Y, W, F, T or S

<220>
<221> VARIANT
<222> (11)...(11)
<223> Xaa=N or Q

<220>
<221> VARIANT
<222> (12)...(12)
<223> Xaa=Y, S, W, F, T, S, T, A or C

<220>
<221> VARIANT
<222> (13)...(13)
<223> Xaa=V, I, M, L, F, or A

<220>
<221> VARIANT
<222> (14)...(14)
<223> Xaa=S, T, A or C

<400> 413
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 414
<211> 17
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 1
<223> Xaa=W, Y or F

<220>
<221> VARIANT
<222> 2
<223> Xaa=V, I, M, L, F or A

<220>
<221> VARIANT
<222> 3
<223> Xaa=S, T, A or C

<220>
<221> VARIANT
<222> 4
<223> Xaa=A, F, V, L, I, Y or M

<220>
<221> VARIANT
<222> 5
<223> Xaa=Y, W, F, T or S

<220>
<221> VARIANT
<222> 6
<223> Xaa=N or Q

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa=G, P or A

<220>
<221> VARIANT
<222> (8)...(8)
<223> Xaa=N or Q

<220>
<221> VARIANT
<222> (9)...(9)
<223> Xaa=T or S

<220>
<221> VARIANT
<222> (10)...(10)
<223> Xaa=N or Q

<220>
<221> VARIANT
<222> (11)...(11)

<223> Xaa=Y, W, F, T or S

<220>
<221> VARIANT
<222> (12)...(12)
<223> Xaa=A, V, L or I

<220>
<221> VARIANT
<222> (13)...(13)
<223> Xaa=Q, E, N or D

<220>
<221> VARIANT
<222> (14)...(14)
<223> Xaa=K, R, Q or N

<220>
<221> VARIANT
<222> (15)...(15)
<223> Xaa=L, F, V, I, M, A or Y

<220>
<221> VARIANT
<222> (16)...(16)
<223> Xaa=Q or N

<220>
<221> VARIANT
<222> (17)...(17)
<223> Xaa=G, P or A

<400> 414
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15
Xaa

<210> 415
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 1
<223> Xaa=E or D

<220>
<221> VARIANT
<222> 2
<223> Xaa=V, I, M, L, F or A

<220>
<221> VARIANT
<222> 3
<223> Xaa=S, T, A or C

<220>
<221> VARIANT
<222> 4
<223> Xaa=N or Q

<220>
<221> VARIANT
<222> 5
<223> Xaa=R, K, Q or N

<220>
<221> VARIANT
<222> 6
<223> Xaa=P or A

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa=S, T, A or C

<400> 415
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 416
<211> 6
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 1
<223> Xaa=G, P, A or no amino acid

<220>
<221> VARIANT
<222> 2
<223> Xaa=Y, W, F, T or S

<220>

<221> VARIANT
<222> 3
<223> Xaa=G, V, P, A, I, M, L or F

<220>
<221> VARIANT
<222> 4
<223> Xaa=M, L, F or I

<220>
<221> VARIANT
<222> 5
<223> Xaa=D or E

<220>
<221> VARIANT
<222> 6
<223> Xaa=V, I, M, L, F or A

<400> 416
Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 417
<211> 9
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> 1
<223> Xaa=S, N, T, A, C or Q

<220>
<221> VARIANT
<222> 2
<223> Xaa=S, T, A or C

<220>
<221> VARIANT
<222> 3
<223> Xaa=Y, W, F, T or S

<220>
<221> VARIANT
<222> 4
<223> Xaa=T or S

<220>
<221> VARIANT
<222> 5
<223> Xaa=S, T, A or C

<220>
<221> VARIANT
<222> 6
<223> Xaa=S, T, A or C

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa=N, S, Q, T, A or C

<220>
<221> VARIANT
<222> (8)...(8)
<223> Xaa=M, V, L, F, I or A

<220>
<221> VARIANT
<222> (9)...(9)
<223> Xaa=V, I, M, L, F or A

<400> 417
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 418
<211> 363
<212> DNA
<213> Homo sapiens

<400> 418
caggtgcagg tggtgcagtc tggggctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggata caccttcacc ggctactata tacactgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcaaccctc acagtggtgg cgcaaactat 180
gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcag cacagcctac 240
atggagctga gcaggctgag atctgacgac acggccgtgt attactgtgc gagaggcaac 300
tggaactacg actactacgg tatggacgtc tggggccaag ggaccacggt caccgtctcc 360
tca   363

<210> 419
<211> 121
<212> PRT
<213> Homo sapiens

<400> 419
Gln Val Gln Val Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
            20   25   30

```
Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Trp Ile Asn Pro His Ser Gly Gly Ala Asn Tyr Ala Gln Lys Phe
    50                  55                  60
Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Asn Trp Asn Tyr Asp Tyr Tyr Gly Met Asp Val Trp Gly
            100                 105                 110
Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120


<210> 420
<211> 321
<212> DNA
<213> Homo sapiens

<400> 420
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcgagtca ggacattagc aattatttag cctggtatca gcagaaacca 120
gggaaagttc ctaagctcct gatctatgct gcatccactt tgcaatcagg ggtcccatct 180
cggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag cctacagcct 240
gaagatgttg caacttattt ctgtcaaagg tatcagattg ccccattcac tttcggccct 300
gggaccaagg tggatatcaa a                                           321

<210> 421
<211> 107
<212> PRT
<213> Homo sapiens

<400> 421
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1               5                  10                  15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr
            20                  25                  30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile
        35                  40                  45
Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Val Ala Thr Tyr Phe Cys Gln Arg Tyr Gln Ile Ala Pro Phe
                85                  90                  95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100                 105


<210> 422
<211> 366
<212> DNA
<213> Homo sapiens
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<400> 422
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atctggtatg atggaagtac taaatactat 180
gcagactccg tgaagggccg atccaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gaggtcagtg 300
gctggttacc actactacta cggtatggac gtctggggcc aagggaccac ggtcaccgtc 360
tcctca 366

<210> 423
<211> 122
<212> PRT
<213> Homo sapiens

<400> 423
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Val Ile Trp Tyr Asp Gly Ser Thr Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Ser Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Ser Val Ala Gly Tyr His Tyr Tyr Tyr Gly Met Asp Val Trp
            100   105   110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 424
<211> 324
<212> DNA
<213> Homo sapiens

<400> 424
tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaggatc 60
acatgccaag gagacagcct cagaggctat tatgcaacct ggtaccagca gaagccaaga 120
caggcccctg tacttgtcat ctatggtaaa aactaccggc cctcagggat cccagaccga 180
ttctctggct ccacctcagg aaacacagct tccttgacca tcactggggc tcaggcggaa 240
gatgaggctg actattactg taactcccgg gacagcattg gtaaccatct ggtgttcggc 300
ggagggacca agctgaccgt ccta 324

<210> 425
<211> 108
<212> PRT
<213> Homo sapiens

<400> 425
Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
 1   5   10   15

```
Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Gly Tyr Tyr Ala
            20                  25                  30
Thr Trp Tyr Gln Gln Lys Pro Arg Gln Ala Pro Val Leu Val Ile Tyr
        35                  40                  45
Gly Lys Asn Tyr Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
    50                  55                  60
Thr Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65                  70                  75                  80
Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Ile Gly Asn His
                85                  90                  95
Leu Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
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<210> 426
<211> 366
<212> DNA
<213> Homo sapiens

<400> 426
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt agctatggct tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggttag atggaagtaa taaatactat 180
gcagactccg tgaagggccg atccaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gaggtcagtg 300
gctggttacc actactacta cggtatggac gtctggggcc aagggaccac ggtcaccgtc 360
tcctca 366

<210> 427
<211> 122
<212> PRT
<213> Homo sapiens

<400> 427
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Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Gly Leu His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Val Ile Trp Leu Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Ser Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Ser Val Ala Gly Tyr His Tyr Tyr Tyr Gly Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
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<210> 428
<211> 324

<212> DNA
<213> Homo sapiens

<400> 428
tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaggatc 60
acatgccaag gagacagcct cagaagttat tatggaagct ggtaccagca gaagccaaga 120
caggcccctg tacttgtcat ctttggtaaa aacaaccggc cctcagggat cccagaccga 180
ttctctggct ccacctcagg aaacacagct tccttgacca tcactggggc tcaggcggaa 240
gatgaggctg actattactg taactcacgg gacatcattg gtgaccatct gctgttcggc 300
ggagggacca agctgaccgt ccta 324

<210> 429
<211> 108
<212> PRT
<213> Homo sapiens

<400> 429
Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
 1   5   10   15
Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Gly
            20   25   30
Ser Trp Tyr Gln Gln Lys Pro Arg Gln Ala Pro Val Leu Val Ile Phe
        35   40   45
Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
    50   55   60
Thr Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ile Ile Gly Asp His
                85   90   95
Leu Leu Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 430
<211> 366
<212> DNA
<213> Homo sapiens

<400> 430
caggtgcagc tggtggagtc tgggggaggc gtggtccagt ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagg aactatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtttg atggaagtaa taaatactat 180
gcagactccg tgaagggccg atccaccatc tccagagaca attccaagaa cacgctgtat 240
ctgctaatga acagcctgag agccgaggac acggctgtgt attactgtgc gaggtcagtg 300
gctggttacc actactacta cggtatggac gtctggggcc aagggaccac ggtcaccgtc 360
tcctca 366

<210> 431
<211> 122
<212> PRT
<213> Homo sapiens

<400> 431
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Ser Gly Arg

```
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Arg Asn Tyr
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Val Ile Trp Phe Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Ser Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Leu Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Ser Val Ala Gly Tyr His Tyr Tyr Tyr Gly Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
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<210> 432
<211> 324
<212> DNA
<213> Homo sapiens

<400> 432
tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaggatc 60
acatgccagg gagacagcct cagaagctat tatgcaagct ggtaccagca gaagccaaga 120
caggcccctg tacttgtcat ctatggtaaa aacaaccggc cctcagggat cccagaccga 180
atctctggct ccacctcagg aaacacagct tccttgacca tcactggggc tcaggcggaa 240
gatgaggctg actattactg taaatcccgg gacatcattg gtgaccatct ggtgttcggc 300
ggagggacca aactgaccgt ccta   324

<210> 433
<211> 108
<212> PRT
<213> Homo sapiens

<400> 433
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Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
 1               5                  10                  15
Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala
            20                  25                  30
Ser Trp Tyr Gln Gln Lys Pro Arg Gln Ala Pro Val Leu Val Ile Tyr
        35                  40                  45
Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Ile Ser Gly Ser
    50                  55                  60
Thr Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65                  70                  75                  80
Asp Glu Ala Asp Tyr Tyr Cys Lys Ser Arg Asp Ile Ile Gly Asp His
                85                  90                  95
Leu Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
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<210> 434
<211> 342

<212> DNA
<213> Homo sapiens

<400> 434
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtaa taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgt gagagatcgg 300
ggactggact ggggccaggg aaccctggtc accgtctcct ca 342

<210> 435
<211> 114
<212> PRT
<213> Homo sapiens

<400> 435
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Val Arg Asp Arg Gly Leu Asp Trp Gly Gln Gly Thr Leu Val Thr Val
            100   105   110
Ser Ser

<210> 436
<211> 324
<212> DNA
<213> Homo sapiens

<400> 436
tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaggatc 60
acatgccaag gagacagcct cagaggctat tatgcaagct ggtaccagca gaagccaaga 120
caggcccctg tacttgtcat ctatggtaaa aacaaccggc cctcagggat cccagaccga 180
ttctctggct ccacctcagg aaacacagct tccttgacca tcactggggc tcaggcggaa 240
gatgaggctg actattactg taagtcccgg gacagcagtg gtgaccatct ggtgttcggc 300
ggagggacca agctgaccgt ccta 324

<210> 437
<211> 108
<212> PRT
<213> Homo sapiens

<400> 437

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Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
 1               5                  10                  15
Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Gly Tyr Tyr Ala
            20                  25                  30
Ser Trp Tyr Gln Gln Lys Pro Arg Gln Ala Pro Val Leu Val Ile Tyr
        35                  40                  45
Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
    50                  55                  60
Thr Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65                  70                  75                  80
Asp Glu Ala Asp Tyr Tyr Cys Lys Ser Arg Asp Ser Ser Gly Asp His
                85                  90                  95
Leu Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 438
<211> 366
<212> DNA
<213> Homo sapiens

<400> 438
caggtgcagg tggtggagtc tgggggaggc gtggtccagc ctgggggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt aactatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atttggtatg atggaagtag taaatactat 180
gcagactccg tgaagggccg atccaccatc tccagagaca attccaagaa cacggtgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gaggtcagtg 300
gctggttacc actactacta cggtatggac gtctggggcc aagggaccac ggtcaccgtc 360
tcctca 366

<210> 439
<211> 122
<212> PRT
<213> Homo sapiens

<400> 439
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Gln Val Gln Val Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Val Ile Trp Tyr Asp Gly Ser Ser Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Ser Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Val Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Ser Val Ala Gly Tyr His Tyr Tyr Tyr Gly Met Asp Val Trp
            100                 105                 110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 440
<211> 324
<212> DNA
<213> Homo sapiens

<400> 440
tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaggatc 60
acatgccaag gagacagcct cagaggctat tatgcaagct ggtaccagca gaagccaaga 120
caggcccctg tacttgtcat ctatggtaaa aacaaccggc cctcagggat cccagaccga 180
ttctctggct ccacctcagg aaacacagct tccttgacca tcactggggc tcaggcggaa 240
gatgaggctg actattactg taagtcccgg gacagcagtg gtgaccatct ggtgttcggc 300
ggagggacca agctgaccgt ccta 324

<210> 441
<211> 108
<212> PRT
<213> Homo sapiens

<400> 441
Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
 1   5   10   15
Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Gly Tyr Tyr Ala
            20   25   30
Ser Trp Tyr Gln Gln Lys Pro Arg Gln Ala Pro Val Leu Val Ile Tyr
        35   40   45
Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
    50   55   60
Thr Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Lys Ser Arg Asp Ser Ser Gly Asp His
                85   90   95
Leu Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 442
<211> 366
<212> DNA
<213> Homo sapiens

<400> 442
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagtctc 60
tcctgtgcag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtta taaagactat 180
gcagactccg tgaagggccg atccaccatc tccagagaca actccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attattgtgc gaggtcagtg 300
gctggttacc actactacta cggtatggac gtctggggcc aagggaccac ggtcaccgtc 360
tcctca 366

<210> 443
<211> 122
<212> PRT
<213> Homo sapiens

<400> 443
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Ser Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Val Ile Trp Tyr Asp Gly Ser Tyr Lys Asp Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Ser Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Ser Val Ala Gly Tyr His Tyr Tyr Tyr Gly Met Asp Val Trp
            100   105   110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 444
<211> 324
<212> DNA
<213> Homo sapiens

<400> 444
tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaggatc 60
acatgccaag gagacagcct cagaacctat tatgcaagct ggtaccagca gaagccaaga 120
caggccccta ttcttgtcat ctatggtaaa aacaaccggc cctcagggat cccagaccga 180
ttctctggct ccacctcagg aatcacagct tccttgacca tcactggggc tcaggcggaa 240
gatgaggctg actattactg taaatcccgg gacatcattg gtaaccatct gctgttcggc 300
ggagggacta agctgaccgt ccta   324

<210> 445
<211> 108
<212> PRT
<213> Homo sapiens

<400> 445
Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
 1   5   10   15
Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Thr Tyr Tyr Ala
            20   25   30
Ser Trp Tyr Gln Gln Lys Pro Arg Gln Ala Pro Ile Leu Val Ile Tyr
        35   40   45
Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
    50   55   60
Thr Ser Gly Ile Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Lys Ser Arg Asp Ile Ile Gly Asn His
                85   90   95
Leu Leu Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 446
<211> 375
<212> DNA
<213> Homo sapiens

<400> 446
caggtgcagc tggtggcgtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccctcagt agctatggca tgcactgggt ccgccaggct 120
ccaggccagg ggctggagtg ggtggcagtc atatggtatg atggaagtaa caaatactat 180
gcagcctccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagtctgag agccgaggac acggctgtgt attactgtgc gagagggggt 300
ggttcgggga gtcatcgcta ctactactac ggtatggacg tctggggcca agggaccacg 360
gtcaccgtct cctca 375

<210> 447
<211> 125
<212> PRT
<213> Homo sapiens

<400> 447
Gln Val Gln Leu Val Ala Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Leu Ser Ser Tyr
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Val
        35   40   45
Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Ala Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Gly Gly Ser Gly Ser His Arg Tyr Tyr Tyr Tyr Gly Met
            100   105   110
Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120   125

<210> 448
<211> 324
<212> DNA
<213> Homo sapiens

<400> 448
tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaggatc 60
acatgccaag gagacagcct cagaacctat tatgcaagct ggtaccagca gaagccaaga 120
caggccccta ttcttgtcat ctatggtaaa aacaaccggc cctcagggat cccagaccga 180
ttctctggct ccacctcagg aatcacagct tccttgacca tcactggggc tcaggcggaa 240
gatgaggctg actattactg taaatcccgg gacatcattg gtaaccatct gctgttcggc 300
ggagggacta agctgaccgt ccta 324

<210> 449
<211> 108
<212> PRT

<213> Homo sapiens

<400> 449
Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
 1   5   10   15
Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Thr Tyr Tyr Ala
            20   25   30
Ser Trp Tyr Gln Gln Lys Pro Arg Gln Ala Pro Ile Leu Val Ile Tyr
        35   40   45
Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
    50   55   60
Thr Ser Gly Ile Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Lys Ser Arg Asp Ile Ile Gly Asn His
                85   90   95
Leu Leu Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 450
<211> 366
<212> DNA
<213> Homo sapiens

<400> 450
caggtgcaag tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt aactatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaggtaa taaatactat 180
gcagactccg tgaagggccg atccatcatc tccagagaca attccaagag cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgttt attattgtgc gaggtcagtg 300
gctggttacc attattacta cggtatggac gtctggggcc aagggaccac ggtcaccgtc 360
gcctca   366

<210> 451
<211> 122
<212> PRT
<213> Homo sapiens

<400> 451
Gln Val Gln Val Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Val Ile Trp Tyr Asp Gly Gly Asn Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Ser Ile Ile Ser Arg Asp Asn Ser Lys Ser Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Ser Val Ala Gly Tyr His Tyr Tyr Tyr Gly Met Asp Val Trp
            100   105   110
Gly Gln Gly Thr Thr Val Thr Val Ala Ser

115 120

<210> 452
<211> 327
<212> DNA
<213> Homo sapiens

<400> 452
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 60
tcctgcactg gaaccagcag tgacgttggt ggttataact ctgtctcctg gtaccaacag 120
cacccaggca aacccccaa actcatgatt tatgaggtca gtaatcggcc ctcagggatt 180
tctaatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 240
caggctgagg acgaggctga ttatttctgc agctcatata caagcaccag catggtcttc 300
ggcggaggga ccaagctggc cgtccta 327

<210> 453
<211> 109
<212> PRT
<213> Homo sapiens

<400> 453
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
20 25 30
Asn Ser Val Ser Trp Tyr Gln Gln His Pro Gly Lys Pro Pro Lys Leu
35 40 45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Ile Ser Asn Arg Phe
50 55 60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80
Gln Ala Glu Asp Glu Ala Asp Tyr Phe Cys Ser Ser Tyr Thr Ser Thr
85 90 95
Ser Met Val Phe Gly Gly Gly Thr Lys Leu Ala Val Leu
100 105

<210> 454
<211> 366
<212> DNA
<213> Homo sapiens

<400> 454
caggtgcaag tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt aactatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaggtaa taaatactat 180
gcagactccg tgaagggccg atccatcatc tccagagaca attccaagag cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgttt attattgtgc gaggtcagtg 300
gctggttacc attattacta cggtatggac gtctggggcc aagggaccac ggtcaccgtc 360
gcctca 366

<210> 455
<211> 122

<212> PRT
<213> Homo sapiens

<400> 455
Gln Val Gln Val Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Val Ile Trp Tyr Asp Gly Gly Asn Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Ser Ile Ile Ser Arg Asp Asn Ser Lys Ser Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Ser Val Ala Gly Tyr His Tyr Tyr Tyr Gly Met Asp Val Trp
            100   105   110
Gly Gln Gly Thr Thr Val Thr Val Ala Ser
        115   120

<210> 456
<211> 324
<212> DNA
<213> Homo sapiens

<400> 456
tcttctgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaggatc 60
acatgccaag gagacagcct cagaggctat tatgcaagct ggtaccagca gaagccaaga 120
caggcccctg tacttgtcat ctatggtaaa aacaaccggc cctcagggat cccagaccga 180
ttctctggct ccacgtcagg aaacacagct tccttgacca tcactggggc tcaggcggaa 240
gatgaggctg actattactg taactcccgg gacaacattg gtgaccatct ggtgttcggc 300
ggagggacca agctgaccgt ccta   324

<210> 457
<211> 108
<212> PRT
<213> Homo sapiens

<400> 457
Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
 1   5   10   15
Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Gly Tyr Tyr Ala
            20   25   30
Ser Trp Tyr Gln Gln Lys Pro Arg Gln Ala Pro Val Leu Val Ile Tyr
        35   40   45
Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
    50   55   60
Thr Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65   70   75   80
Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Asn Ile Gly Asp His
                85   90   95
Leu Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu

100 105

<210> 458
<211> 381
<212> DNA
<213> Homo sapiens

<400> 458
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60
tcctgtgcag cctccggatt cacctttagt agctattgga tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtggccagc ataaaacaag atggaagtga gaaatactat 180
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaggaa ctcactgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagatctt 300
gtattaatgg tgtatgatat agactactac tactacggta tggacgtctg gggccaaggg 360
accacggtca ccgtctcctc a 381

<210> 459
<211> 127
<212> PRT
<213> Homo sapiens

<400> 459
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
Ala Ser Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
 50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Arg Asn Ser Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
Ala Arg Asp Leu Val Leu Met Val Tyr Asp Ile Asp Tyr Tyr Tyr Tyr
 100 105 110
Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120 125

<210> 460
<211> 336
<212> DNA
<213> Homo sapiens

<400> 460
gatattgtga tgactcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc 60
atctcctgca ggtctagtca gagcctcctg catagtaatg gatacaacta tttggattgg 120
tacctgcaga agccagggca gtctccacag ctcctgatct atttgggttc taatcgggcc 180
tccggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttac actgaaaatc 240
agcagagtgg aggctgagga tgttggggtt tattactgca tgcaagctct acaaactccg 300
ctcactttcg gcggagggac caaggtagag atcaaa 336

<210> 461
<211> 112
<212> PRT
<213> Homo sapiens

<400> 461
Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
 1   5   10   15
Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
            20   25   30
Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
        35   40   45
Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro
    50   55   60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65   70   75   80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala
                85   90   95
Leu Gln Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105   110

<210> 462
<211> 381
<212> DNA
<213> Homo sapiens

<400> 462
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60
tcctgtgcag cctccggatt cacctttagt aactattgga tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtggccagc ataaaacaag atggaagtga gaaatactat 180
gtggactctg tgaagggccg attcgccatc tccagagaca acgccaagaa ctcactgttt 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagatctt 300
gtactaatgg tgtatgatat agactactac tactacggta tggacgtctg gggccaaggg 360
accacggtca ccgtctcctc a   381

<210> 463
<211> 127
<212> PRT
<213> Homo sapiens

<400> 463
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
            20   25   30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Ser Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50   55   60
Lys Gly Arg Phe Ala Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95

```
Ala Arg Asp Leu Val Leu Met Val Tyr Asp Ile Asp Tyr Tyr Tyr Tyr
            100                 105                 110
Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125
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<210> 464
<211> 336
<212> DNA
<213> Homo sapiens

<400> 464
gatattgtga tgactcagtc tccactctcc ctgcctgtca cccctggaga gccggcctcc 60
atctcttgca ggtctagtca gagcctcctg catagtaatg ggtacaacta tttggattgg 120
tacctgcaga agccagggca gtctccacag ctcctgatct atttgggttc taatcgggcc 180
tccggggtcc ctgacaggtt cagtggcagt ggatcaggca cacatcttac actgaaaatc 240
agcagagtgg aggctgagga tgttggagtt tattactgca tgcaaactct acaaactccg 300
ctcactttcg gcggagggac caaggtggag atcaaa 336

<210> 465
<211> 112
<212> PRT
<213> Homo sapiens

<400> 465
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Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
 1               5                  10                  15
Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
            20                  25                  30
Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
        35                  40                  45
Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro
    50                  55                  60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr His Leu Thr Leu Lys Ile
65                  70                  75                  80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Thr
                85                  90                  95
Leu Gln Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105                 110
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<210> 466
<211> 342
<212> DNA
<213> Homo sapiens

<400> 466
caggtgcagc tggtggagtc tgggggaggc gtggcccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatactatg atggaattaa taaacactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagatcgg 300
ggactggact ggggccaggg aaccctggtc accgtctcct ca 342

<210> 467
<211> 114
<212> PRT
<213> Homo sapiens

<400> 467
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Ala Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Val Ile Tyr Tyr Asp Gly Ile Asn Lys His Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Arg Gly Leu Asp Trp Gly Gln Gly Thr Leu Val Thr Val
            100   105   110
Ser Ser

<210> 468
<211> 339
<212> DNA
<213> Homo sapiens

<400> 468
gacatcgtga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60
atcaactgca agtccagcca gagtgtttta tacagctcca acagtaagaa ctacttagtt 120
tggtaccagc agaaaccagg acagcctcct aagctgctca tttactgggc ctctacccgg 180
gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240
atcagcagcc tgcaggctga agatgtggca gtttattact gtcaacaata ttatagtact 300
ccgtggacgt tcggccaagg gaccaaggtg gaaatcaaa   339

<210> 469
<211> 113
<212> PRT
<213> Homo sapiens

<400> 469
Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
 1   5   10   15
Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser
            20   25   30
Ser Asn Ser Lys Asn Tyr Leu Val Trp Tyr Gln Gln Lys Pro Gly Gln
        35   40   45
Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50   55   60
Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65   70   75   80
Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln

```
                85                  90                  95
Tyr Tyr Ser Thr Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
            100                 105                 110
Lys
```

<210> 470
<211> 357
<212> DNA
<213> Homo sapiens

<400> 470
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggact cacctttagt aacttttgga tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtggccaac ataaagcaag atggaaatga taaatactat 180
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ttcactgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagagtca 300
aactggggat ttgcttttga tatctggggc caagggacaa tggtcaccgt ctcttca   357

<210> 471
<211> 119
<212> PRT
<213> Homo sapiens

<400> 471
```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Leu Thr Phe Ser Asn Phe
            20                  25                  30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Asn Ile Lys Gln Asp Gly Asn Asp Lys Tyr Tyr Val Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Glu Ser Asn Trp Gly Phe Ala Phe Asp Ile Trp Gly Gln Gly
            100                 105                 110
Thr Met Val Thr Val Ser Ser
        115
```

<210> 472
<211> 327
<212> DNA
<213> Homo sapiens

<400> 472
cagtctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60
tcttgttctg gaagcagctc caacatcgga agtaaaactg taaactggta ccagcagttc 120
ccaggaacgg cccccaaact cctcatctat agtaataatc ggcggccctc aggggtccct 180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240

tctgaggatg aggctgatta ttactgtgca gcatgggatg acagcctgaa ttgggtgttc 300
ggcgcaggga ccaagctgac cgtccta 327

<210> 473
<211> 109
<212> PRT
<213> Homo sapiens

<400> 473
Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln
 1   5   10   15
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Lys
            20   25   30
Thr Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
        35   40   45
Ile Tyr Ser Asn Asn Arg Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
    50   55   60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65   70   75   80
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
                85   90   95
Asn Trp Val Phe Gly Ala Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 474
<211> 357
<212> DNA
<213> Homo sapiens

<400> 474
gaggtgcagc tggtggagtc tgggggaggt ttggtccagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggact cacctttagt aacttttgga tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtggccaac ataaagcaag atggaagtga gaaatactat 180
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ttcactgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagagtca 300
aactggggat ttgcttttga tatctggggc caagggacaa tggtcaccgt ctcttca 357

<210> 475
<211> 119
<212> PRT
<213> Homo sapiens

<400> 475
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Leu Thr Phe Ser Asn Phe
            20   25   30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Glu Ser Asn Trp Gly Phe Ala Phe Asp Ile Trp Gly Gln Gly
100 105 110
Thr Met Val Thr Val Ser Ser
115

<210> 476
<211> 327
<212> DNA
<213> Homo sapiens

<400> 476
cagtctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60
tcttgttctg gaagcagctc caacatcgga agtaaaactg taaactggta ccagcagttc 120
ccaggaacgg cccccaaact cctcatctat agtaataatc ggcggccctc aggggtccct 180
gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240
tctgaggatg aggctgatta ttactgtgca acatgggatg acagactgaa ttgggtgttc 300
ggcgcaggga ccaagctgac cgtccta 327

<210> 477
<211> 109
<212> PRT
<213> Homo sapiens

<400> 477
Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln
1 5 10 15
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Lys
20 25 30
Thr Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45
Ile Tyr Ser Asn Asn Arg Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Arg Leu
85 90 95
Asn Trp Val Phe Gly Ala Gly Thr Lys Leu Thr Val Leu
100 105

<210> 478
<211> 366
<212> DNA
<213> Homo sapiens

<400> 478
caggtcacct tgaaggagtc tggtcctgtg ctggtgaaac ccacagagac cctcacgctg 60
acctgcaccg tctctgggtt ctcactcagc aatgttagaa tgggtgtgag ctggatccgt 120
cagcccccag ggaaggccct ggagtggctt gcacacattt tttcgaatga cgaaaattcc 180
tacagaacat ctctgaagag caggctcacc atctccaagg acacctccaa aagccaggtg 240
gtccttacca tgaccaacat ggaccctgtg gacacagcca catattactg tgcacggata 300

gtgggagcta caacggatga tgcttttgat atctggggcc aagggacaat ggtcaccgtc 360
tcttca 366

<210> 479
<211> 122
<212> PRT
<213> Homo sapiens

<400> 479
Gln Val Thr Leu Lys Glu Ser Gly Pro Val Leu Val Lys Pro Thr Glu
 1   5   10   15
Thr Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Asn Val
            20   25   30
Arg Met Gly Val Ser Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35   40   45
Trp Leu Ala His Ile Phe Ser Asn Asp Glu Asn Ser Tyr Arg Thr Ser
    50   55   60
Leu Lys Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Ser Gln Val
65   70   75   80
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
                85   90   95
Cys Ala Arg Ile Val Gly Ala Thr Thr Asp Asp Ala Phe Asp Ile Trp
            100   105   110
Gly Gln Gly Thr Met Val Thr Val Ser Ser
        115   120

<210> 480
<211> 324
<212> DNA
<213> Homo sapiens

<400> 480
tcctatgtgc tgactcagcc accctcggtg tcagtggccc caggacagac ggccaggatt 60
acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120
caggcccctg tgctggtcgt ctatgatgat agcgaccggc cctcagggat ccctgagcga 180
ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240
gatgaggccg acttttactg tcaggtgtgg gatagtagta gtgatcctgt ggtattcggc 300
ggagggacca agctgaccgt ccta 324

<210> 481
<211> 108
<212> PRT
<213> Homo sapiens

<400> 481
Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Gln
 1   5   10   15
Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val
            20   25   30
His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
        35   40   45
Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
    50   55   60

```
Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65                  70                  75                  80
Asp Glu Ala Asp Phe Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp Pro
                85                  90                  95
Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
```

<210> 482
<211> 381
<212> DNA
<213> Homo sapiens

<400> 482
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagt aactattgga tgacctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtggccagc ataaagcaag atggaagtga gagatactat 180
gtggactctg tgaagggccg attcaccatc tcccgagaca ccgccaagaa ctctctgtat 240
ctccaaatga acagcctgcg agccgaggac acggctgtgt attactgtgc gagacctctt 300
gtactaatgg tgtatgctct acactactac tactacggta tggacgtctg gggccacggg 360
accacggtca ccgtctcctc a 381

<210> 483
<211> 127
<212> PRT
<213> Homo sapiens

<400> 483
```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
            20                  25                  30
Trp Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Ser Ile Lys Gln Asp Gly Ser Glu Arg Tyr Tyr Val Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Thr Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Pro Leu Val Leu Met Val Tyr Ala Leu His Tyr Tyr Tyr Tyr
            100                 105                 110
Gly Met Asp Val Trp Gly His Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125
```

<210> 484
<211> 336
<212> DNA
<213> Homo sapiens

<400> 484
gatattgtga tgactcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc 60
atctcctgca ggtctagtca gagcctcctg catagtaatg gatacaacta tttggattgg 120

tacctgcaga agccagggca gtctccacag ctcctgatct atttgggttc taatcgggcc 180
tccggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttac actgaaaatc 240
agcagagtgg aggctgagga tgttggggtt tattactgca tgcaagctct acaaactccg 300
ctcactttcg gcggagggac caaggtggag atcaaa 336

<210> 485
<211> 112
<212> PRT
<213> Homo sapiens

<400> 485
Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
 1   5   10   15
Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
            20   25   30
Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
        35   40   45
Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro
    50   55   60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65   70   75   80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala
                85   90   95
Leu Gln Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105   110

<210> 486
<211> 100
<212> PRT
<213> Homo sapiens

<400> 486
Gln Val Thr Leu Lys Glu Ser Gly Pro Val Leu Val Lys Pro Thr Glu
 1   5   10   15
Thr Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Asn Ala
            20   25   30
Arg Met Gly Val Ser Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35   40   45
Trp Leu Ala His Ile Phe Ser Asn Asp Glu Lys Ser Tyr Ser Thr Ser
    50   55   60
Leu Lys Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Ser Gln Val
65   70   75   80
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
                85   90   95
Cys Ala Arg Ile
            100

<210> 487
<211> 98
<212> PRT
<213> Homo sapiens

<400> 487
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg

<210> 488
<211> 98
<212> PRT
<213> Homo sapiens

<400> 488
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg

<210> 489
<211> 93
<212> PRT
<213> Homo sapiens

<400> 489
Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
 1   5   10   15
Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
            20   25   30
Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
        35   40   45
Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro
    50   55   60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile

65 70 75 80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys
85 90

<210> 490
<211> 94
<212> PRT
<213> Homo sapiens

<400> 490
Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
1 5 10 15
Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser
20 25 30
Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
35 40 45
Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
50 55 60
Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65 70 75 80
Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
85 90

<210> 491
<211> 89
<212> PRT
<213> Homo sapiens

<400> 491
Gln Ser Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln
1 5 10 15
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
20 25 30
Thr Val Asn Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45
Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys
85

<210> 492
<211> 87
<212> PRT
<213> Homo sapiens

<400> 492
Ser Tyr Val Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1 5 10 15
Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Ser Val

```
            20                  25                  30
His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
        35                  40                  45
Tyr Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
    50                  55                  60
Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly
65                  70                  75                  80
Asp Glu Ala Asp Tyr Tyr Cys
                85
```

<210> 493
<211> 49
<212> PRT
<213> Homo sapiens

<400> 493

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
            20                  25                  30
Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly
```

<210> 494
<211> 98
<212> PRT
<213> Homo sapiens

<400> 494

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg
```

<210> 495
<211> 98
<212> PRT
<213> Homo sapiens

<400> 495
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg

<210> 496
<211> 88
<212> PRT
<213> Homo sapiens

<400> 496
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Val Ala Thr Tyr Tyr Cys
                85

<210> 497
<211> 90
<212> PRT
<213> Homo sapiens

<400> 497
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
            20   25   30
Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
        35   40   45
Met Ile Tyr Glu Val Ser Asn Arg Pro Ser Gly Val Ser Asn Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys

85 90

<210> 498
<211> 87
<212> PRT
<213> Homo sapiens

<400> 498
Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
1 5 10 15
Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala
20 25 30
Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45
Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60
Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65 70 75 80
Asp Glu Ala Asp Tyr Tyr Cys
85

<210> 499
<211> 13
<212> PRT
<213> Homo sapiens

<400> 499
Ser Gly Ser Ser Ser Asn Ile Gly Ser Lys Thr Val Asn
1 5 10

<210> 500
<211> 10
<212> PRT
<213> Homo sapiens

<400> 500
Gly Phe Thr Phe Ser Asn Tyr Trp Met Ser
1 5 10

<210> 501
<211> 17
<212> PRT
<213> Homo sapiens

<400> 501
Ser Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val Lys
1 5 10 15
Gly

<210> 502
<211> 18
<212> PRT
<213> Homo sapiens

<400> 502
Asp Leu Val Leu Met Val Tyr Asp Ile Asp Tyr Tyr Tyr Tyr Gly Met
 1   5   10   15
Asp Val

<210> 503
<211> 16
<212> PRT
<213> Homo sapiens

<400> 503
Arg Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp
 1   5   10   15

<210> 504
<211> 7
<212> PRT
<213> Homo sapiens

<400> 504
Leu Gly Ser Asn Arg Ala Ser
 1   5

<210> 505
<211> 9
<212> PRT
<213> Homo sapiens

<400> 505
Met Gln Thr Leu Gln Thr Pro Leu Thr
 1   5

<210> 506
<211> 25
<212> PRT
<213> Homo sapiens

<400> 506
Gln Val Thr Leu Lys Glu Ser Gly Pro Val Leu Val Lys Pro Thr Glu
 1   5   10   15
Thr Leu Thr Leu Thr Cys Thr Val Ser
            20   25

<210> 507
<211> 12
<212> PRT
<213> Homo sapiens

<400> 507
Gly Phe Ser Leu Ser Asn Ala Arg Met Gly Val Ser
 1   5   10

<210> 508
<211> 12
<212> PRT
<213> Homo sapiens

<400> 508
Gly Phe Ser Leu Ser Asn Val Arg Met Gly Val Ser
 1   5   10

<210> 509
<211> 14
<212> PRT
<213> Homo sapiens

<400> 509
Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu Trp Leu Ala
 1   5   10

<210> 510
<211> 25
<212> PRT
<213> Homo sapiens

<400> 510
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser
            20   25

<210> 511
<211> 10
<212> PRT
<213> Homo sapiens

<400> 511
Gly Phe Thr Phe Ser Ser Tyr Trp Met Ser
 1   5   10

<210> 512

<211> 10
<212> PRT
<213> Homo sapiens

<400> 512
Gly Leu Thr Phe Ser Asn Phe Trp Met Ser
 1   5   10

<210> 513
<211> 10
<212> PRT
<213> Homo sapiens

<400> 513
Gly Phe Thr Phe Ser Asn Tyr Trp Met Thr
 1   5   10

<210> 514
<211> 14
<212> PRT
<213> Homo sapiens

<400> 514
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala
 1   5   10

<210> 515
<211> 25
<212> PRT
<213> Homo sapiens

<400> 515
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser
            20   25

<210> 516
<211> 25
<212> PRT
<213> Homo sapiens

<400> 516
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Ala Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser
            20   25

<210> 517

<211> 10
<212> PRT
<213> Homo sapiens

<400> 517
Gly Phe Thr Phe Ser Ser Tyr Gly Met His
 1   5   10

<210> 518
<211> 14
<212> PRT
<213> Homo sapiens

<400> 518
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala
 1   5   10

<210> 519
<211> 16
<212> PRT
<213> Homo sapiens

<400> 519
His Ile Phe Ser Asn Asp Glu Lys Ser Tyr Ser Thr Ser Leu Lys Ser
 1   5   10   15

<210> 520
<211> 16
<212> PRT
<213> Homo sapiens

<400> 520
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            20   25   30

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<210> 571
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```

WHAT IS CLAIMED IS:

1. An isolated neutralizing antigen binding protein that binds to a PCSK9 protein comprising the amino acid sequence of SEQ ID NO: 1, wherein the neutralizing antigen binding protein decreases the LDLR lowering effect of PCSK9 on LDLR.

2. The isolated neutralizing antigen binding protein of any one of the antigen binding protein claims herein, wherein the antigen binding protein is a LDLR non-competitive neutralizing antigen binding protein.

3. The isolated neutralizing antigen binding protein of any one of the antigen binding protein claims herein, wherein the antigen binding protein is a LDLR competitive neutralizing antigen binding protein.

4. An antigen binding protein that selectively binds to PCSK9, wherein said antigen binding protein binds to PCSK9 with a K_d that is less than 100 pM.

5. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the antigen binding protein binds with a K_d that is less than 10 pM.

6. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the antigen binding protein binds with a K_d that is less than 5 pM.

7. An isolated antigen binding protein that binds to a PCSK9 protein of SEQ ID NO: 1, wherein the binding between said isolated antigen binding protein and a variant PCSK9 protein is less than 50% of the binding between the isolated antigen binding protein and the PCSK9 protein of SEQ ID NO: 1.

8. The isolated human antigen binding protein any one of the antigen binding protein claims herein, wherein the variant PCSK9 protein comprises at least one mutation of a residue at a position selected from the group consisting of 207, 208, 185, 181, 439, 513, 538, 539, 132, 351, 390, 413, 582, 162, 164, 167, 123, 129, 311, 313, 337, 519, 521, and 554, as shown in SEQ ID NO: 1.

9. The isolated human antigen binding protein of any one of the antigen binding protein claims herein, wherein the at least one mutation selected from the group consisting of R207E, D208R, E181R, R185E, R439E, E513R, V538R, E539R, T132R, S351R, A390R, A413R, and E582R

10. The isolated human antigen binding protein of any one of the antigen binding protein claims herein, wherein the at least one mutation is selected from the group consisting of D162R, R164E, E167R, S123R, E129R, A311R, D313R, D337R, R519E, H521R,and Q554R.

11. An antigen binding protein that binds to a PCSK 9 protein of SEQ ID NO: 303 in a first manner, wherein the antigen binding protein binds to a variant of PCSK9 in a second manner, wherein said PCSK9 variant has at least one point mutation at a position selected from the group consisting of: 207, 208, 185, 181, 439, 513, 538, 539, 132, 351, 390, 413, 582, 162, 164, 167, 123, 129, 311, 313, 337, 519, 521, and 554 of SEQ ID NO: 303, wherein the first manner comprises a first EC50, a first Bmax, or a first EC50 and a first Bmax, wherein the second manner comprises a second EC50, a second Bmax, or a second EC50 and a second Bmax, and wherein a value for the first manner is different from a value for the second manner.

12. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the first manner comprises a first EC50, wherein the second manner involves a second EC50, and wherein the point mutation is selected from the group consisting of: R207E, D208R, E181R, R185E, R439E, E513R, V538R, E539R, T132R, S351R, A390R, A413R, and E582R.

13. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the first EC50 is at least 20% different from the second EC50.

14. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the first EC50 is at least 50% different from the second EC50.

15. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the second EC50 is a larger numerical value than the first EC50.

16. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the first EC50 is determined by multiplex bead binding assay.

17. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the second EC50 is greater than 1 uM.

18. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the antigen binding protein is a neutralizing antigen binding protein.

19. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the neutralizing antigen binding protein is a competitive neutralizing antigen binding protein.

20. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the neutralizing antigen binding protein is a non-competitive neutralizing antigen binding protein.

21. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the first manner comprises a first Bmax, wherein the second manner comprises a second Bmax that is different from the first Bmax, and wherein said PCSK9 variant has at least one point mutation selected from the group consisting of: D162R, R164E, E167R, S123R, E129R, A311R, D313R, D337R, R519E, H521R, and Q554R.

22. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the second Bmax is about 10% of the first Bmax.

23. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the first Bmax is at least 20% different from the second Bmax.

24. The antigen binding protein of any one of the antigen binding protein claims herein, wherein the first Bmax is at least 50% different from the second Bmax.

25. An isolated antibody that binds to PCSK9 at a location that overlaps with a location that LDLR binds to PCSK9.

26. A neutralizing antibody that binds to PCSK9 and reduces a low density lipoprotein receptor (LDLR) lowering effect of PCSK9 on LDLR.

27. A neutralizing antibody that binds to PCSK9, wherein the antibody binds to PCSK9 at a location within residues 31-447 of SEQ ID NO: 3.

28. The antibody of Claim 27, wherein the antibody binds to an epitope within residues 31-447 of SEQ ID NO: 3.

29. A pharmaceutical composition comprising at least one antigen binding protein according to any one of Claims 1-28, and a pharmaceutically acceptable excipient.

30. A nucleic acid molecule encoding the antigen binding protein according to any one of Claims 1-28.

31 A method of making an antigen binding protein that binds to a PCSK9 protein comprising the amino acid sequence of SEQ ID NO: 1, wherein the antigen binding protein decreases the LDLR lowering effect of PCSK9 on LDLR, said method comprising:

providing a host cell comprising a nucleic acid sequence that encodes the antigen binding protein; and

maintaining the host cell under conditions in which the antigen binding protein is expressed.

32. A method of lowering serum cholesterol level in a subject, said method comprising administering to a subject an effective amount of an isolated neutralizing antigen binding protein that binds to a PCSK9 protein comprising the amino acid sequence of SEQ ID NO: 1, wherein the neutralizing antigen binding protein decreases the LDLR lowering effect of PCSK9 on LDLR.

33. A method for treating or preventing a condition associated with an elevated serum cholesterol level in a patient, comprising administering to a patient in need thereof an effective amount of an isolated neutralizing antigen binding protein that binds to a PCSK9 protein comprising the amino acid sequence of SEQ ID NO: 1, wherein the neutralizing antigen binding protein decreases the LDLR lowering effect of PCSK9 on LDLR.

34. A method for treating or preventing a condition associated with elevated serum cholesterol levels in a subject, said method comprising administering to a subject in need thereof an effective amount of an isolated neutralizing antigen binding protein simultaneously or sequentially with an agent that elevates the availability of LDLR protein, wherein the isolated antigen binding protein binds to a PCSK9 protein comprising the amino acid sequence of SEQ ID NO: 1, wherein the neutralizing antigen binding protein decreases the LDLR lowering effect of PCSK9 on LDLR.

35. The method of one of Claims 31-34, wherein the agent that elevates the availability of LDLR protein comprises a statin.

36. The method of one of Claims 31-35, wherein the statin is selected from the group consisting of atorvastatin, cerivastatin, fluvastatin, lovastatin, mevastatin, pitavastatin, pravastatin, rosuvastatin, simvastatin, and some combination thereof.

37. The use of an antigen binding protein of Claims 1-22 in the preparation of a medicament for the lowering of serum cholesterol.

38. The use of an antigen binding protein of Claims 1-22 in the preparation of a medicament for treating or preventing a condition associated with elevated serum cholesterol levels in a subject.