HEPARIN-BINDING EPIDERMAL GROWTH FACTOR-LIKE GROWTH FACTOR ANTIGEN BINDING PROTEINS

BACKGROUND

[0001]The human epidermal growth factor receptor (HER) family comprises four distinct receptor tyrosine kinases referred to as HER1 (or erbB1), HER2 (or erbB2), HER3 (or erbB3), and HER4 (or erbB4). HER1 is also commonly referred to as epidermal growth factor receptor (EGFR). With the exception of HER3, these receptors have phospho-acceptor target specific intrinsic protein tyrosine kinase activities. Members of the HER family are expressed in most epithelial cells as well as in a number of different tumor cell types. For example, receptors of the HER family are expressed in tumor cells of epithelial origin, and of mesenchymal origin. Moreover, HER receptor tyrosine kinases are involved in cell proliferation and angiogenesis, which are associated with diseases such as cancer. For example, EGFR is frequently over-expressed or aberrantly activated in breast cancers, liver cancers, kidney cancers, leukemia, bronchial cancers, pancreatic cancers and gastrointestinal cancers such as colon, rectal or stomach cancers. High levels of the EGF receptor also correlate with poor prognosis and response to treatment (Wright *et al.*, 1992, *Br. J. Cancer* 65:118-121). Thus, disruption of signal transduction from and to these kinases would have an anti-proliferative, and as such, therapeutic effect upon a number of cancer and tumor cell types.

[0002]The enzymatic activity of receptor tyrosine kinases can be stimulated by over-expression and/or by ligand-mediated dimerization (Heldin, 1995, *Cell* 80:213-223). Activation of receptor homodimers and heterodimers results in phosphorylation of tyrosine residues on the receptors, which in turn phosphorylate tyrosine residues of other molecules, including intracellular proteins. (Ullrich *et al.*, 1990, *Cell* 61:203-212). This is followed by the activation of intracellular signaling pathways such as those involving the mitogen-activated protein kinase (MAP kinase) (Dhillon et al., 2007, *Oncogene* 26: 3279-3290) and the phosphatidylinositol 3-kinase (PI3 kinase). While activation of these pathways has been shown to increase cell proliferation and inhibit apoptosis, inhibition of signaling mediated by HER family members by either small molecule inhibitors or monoclonal antibodies has been shown to inhibit cell proliferation and promote apoptosis (Prenzel *et al.*, 2001, *Endocr. Relat. Cancer* 8: 11-31)

[0003]Heparin-binding epidermal growth factor-like growth factor (HB-EGF) is a 22 kDa, O-glycosylated protein (Higahiyama *et al.*, 1992, *J Biol Chem* 267: 6205-6212). In its mature form, HB-EGF binds to and activates the EGF receptor and HER4 (Elenius et al., 1997, EMBO 16:1268-1278). HB-EGF is the key mediator of G-protein coupled receptor (GPCR) induced cell proliferation *via* a process called triple-membrane passing signaling (TMPS) (Prenzel *et al.*,

1999, *Nature* 402:884-888, review in Fischer *et al.* 2003, *Biochem. Soc. Trans.* 31:1203-1208). It has been shown that HB-EGF promotes cellular proliferation as well as angiogenesis (Zushi *et al.*, 1997, *Int J Cancer* 73:917-923; Abramovitch *et al.*, 1998, *FEBS letters* 425:441-447). HB-EGF also has been demonstrated to play a key role in a number of cancers, *i.e.*, it has been linked to the aggressive behavior of ovarian tumors (Tanaka *et al.*, 2005, *Clin. Cancer Res.* 11:4783-4792). Moreover, HB-EGF is essential for xenograft tumor formation by ovarian cancer cell lines. Over-expression of HB-EGF (*wild type* or a secreted form) accelerates tumor formation in SKOV3 and RMG-1 cells. Knockdown of endogenous HB-EGF using siRNA, yet, abolished or delayed tumor formation by SKOV3 and RMG-1 cells. Miyamoto, 2004, *Cancer Res.* 64:5720. As suggested by the above evidence, inhibition of HB-EGF expression or activity may inhibit tumor formation.

[0004]Similarly, HB-EGF is a marker of poor prognosis in some cancers, including human bladder cancers (Thogersen *et al.*, 2001, *Cancer Res.* 61:6227-6233). *In vitro* studies indicate that human EJ bladder cells that were engineered to express HB-EGF (*wild type*, soluble or non-cleavable) exhibit an increase in growth, anchorage independent growth, and production of VEGF, and enhanced migration. When these HB-EGF-expressing EJ bladder cells were transplanted into nude mice, an increase in tumor formation, size and density of blood vessels was observed in those tumors. (Ongusaha, 2004, *Cancer Res.* 64:5283-5290).

SUMMARY

[0005]Provided herein are isolated antigen binding proteins that bind HB-EGF. Some of these antigen binding proteins comprise A) one or more light chain complementary determining regions (CDRLs) consisting of: (i) a CDRL1 selected from SEQ ID NOs:**189-217**; (ii) a CDRL2 selected from from SEQ ID NOs:**218-233**; (*iii*) a CDRL3 selected from SEQ ID NO:**234-274**; or (iv) a CDRL of (i), (ii) or (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than four amino acids. Alternatively, the HB-EGF antigen binding protein may comprise B) one or more heavy chain complementary determining regions (CDRHs) consisting of: (i) a CDRH1 selected from SEQ ID NO:**275-299**; (ii) a CDRH2 selected from SEQ ID NO:**300-331**; (iii) a CDRH3 selected from SEQ ID NO:**332-372**; or (iv) a CDRH of (i), (ii) or (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than four amino acids.

[0006]In one embodiment, the isolated antigen binding protein may comprise one, two or more of the aforementioned light chain CDRLs and one, two or more of the aforementioned heavy chain CDRHs. In one aspect, the isolated antigen binding protein comprises CDRH1, CDRH2, CDRH3, CDRL1, CDRL2 and CDRL3. In another aspect, the isolated antigen binding protein of A), *supra*, is selected from the group consisting of: a CDRL1 from SEQ ID NOs:**189-217**; a CDRL2 from SEQ ID NOs:**218-233**; a CDRL3 from SEQ ID NOs:**234-274**; and a CDRL of the

any of the aforementioned (i), (ii) or (ii) that contains one or more amino acid substitutions, deletions or insertions of no more than two amino acids. In addition, said heavy chain CDRH of B), *supra*, is selected from a CDRH1 from SEQ ID NOs:**275-299**; a CDRH2 from SEQ ID NOs:**300-331**; a CDRH3 amino acid sequence from SEQ ID NOs:**332-372** and a CDRH of the aforementioned that contains one or more amino acid substitutions, deletions or insertions of no more than two amino acids. Furthermore, the isolated antigen binding protein may comprise or one or more light chain CDRLs of A), *supra*; and one or more heavy chain CDRHs of B), *supra*.

[0007]In another embodiment, the antigen binding protein comprises a CDRL selected from the following: a CDRL1 from SEQ ID NOs:**189-217**; a CDRL2 from SEQ ID NOs:**218-233**; and a CDRL3 from SEQ ID NOs:**234-274**. The antigen binding protein may also comprise a CDRH selected from one of the following: a CDRH1 from SEQ ID NOs:**275-299**; a CDRH2 from SEQ ID NOs:**300-331**; and a CDRH3 selected from SEQ ID NOs:**332-372**. Alternatively, the isolated antigen binding protein may comprise one or more light chain CDRLs listed in A), *supra*, and one or more heavy chain CDRHs of B), *supra*. In particular, the isolated antigen binding protein may comprise a CDRL1 of SEQ ID NOs:**189-217**, a CDRL2 of SEQ ID NOs:**218-233,** and a CDRL3 of SEQ ID NOs:**234-274** and/or a CDRH1 of SEQ ID NOs:**275-299**, a CDRH2 of SEQ ID NOs:**300-331**, and a CDRH3 of SEQ ID NO:**332-372**.

[0008]In one aspect, the isolated antigen binding protein comprises a light chain variable region (V_L) having at least 80%, 90% or 100% sequence identity with an amino acid sequence selected from SEQ ID NOs:**94-141**. In another aspect, the isolated antigen binding protein comprises a heavy chain variable region (V_H) having at least 80%, 90% or 100% sequence identity with an amino acid sequence from SEQ ID NOs:**142-186**.

[0009]In another embodiment, the isolated antigen binding protein specifically recognizes at least an IHGE containing epitope and/or an EGF-like domain of HB-EGF.

[00010]Provided herein, in addition, is an isolated antigen binding protein that competes for binding with the isolated antigen binding protein that binds HB-EGF, as described above.

[00011]Also provided herein is an isolated antigen binding protein which binds HB-EGF and comprises A) one or more light chain CDRs (CDRLs) from the group consisting of: (i) a CDRL1 with at least 80%, or at least 90% sequence identity to SEQ ID NOs:**189-217**; (ii) a CDRL2 with at least 80%, or at least 90% sequence identity to SEQ ID NOs:**218-233**; and (iii) a CDRL3 with at least 80%, or at least 90% sequence identity to SEQ ID NOs:**234-274**. Alternatively, the isolated antigen binding protein which binds HB-EGF, comprises B) one or more heavy chain CDRs (CDRHs) from the group consisting of (i) a CDRH1 with at least 80%, or at least 90% sequence identity to SEQ ID NOs:**275-299**; (ii) a CDRH2 with at least 80%, or at least 90% sequence identity to SEQ ID NOs:**300-331**; and (iii) a CDRH3 with at least 80%, or at least 90%

sequence identity to SEQ ID NOs:**332-372**. The isolated antigen binding protein may also comprise C) one or more light chain CDRLs of A) and one or more heavy chain CDRHs of B).

[00012]In another embodiment, the isolated antigen binding protein binds HB-EGF and comprises: A) a light chain complementary determining region (CDRL) selected from: (i) a CDRL3 selected from the group consisting of SEQ ID NOs:**234-274**; (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 following:

$X_1QX_2X_3X_4X_5PX_6X_7$ (SEQ ID NO:1046), wherein

X_1 is I or M,

X_2 is A, G or S,

X_3 is I or T,

X_4 is H or Q,

X_5 is F, L or W,

X_6 is C, I, H, L or T,

X_7 is S or T;

$QQX_1X_2X_3X_4X_5IT$ (SEQ ID NO:1047), wherein

X_1 is I or S,

X_2 is F or Y,

X_3 is F, I, S or Y,

X_4 is A, S or T,

X_5 is P or S;

$X_1X_2X_3X_4X_5X_6X_7X_8T$ (SEQ ID NO:1048), wherein

X_1 is L or Q,

X_2 is K, N or Q,

X_3 is A, H, S or Y,

X_4 is H, N or Y,

X_5 is N, S or T,

X_6 is A, F, I, T, V or Y,

X_7 is P or no amino acid,

X_8 is F, L or P;

$QX_1X_2DX_3LPX_4X_5$ (SEQ ID NO:1049), wherein

X_1 is H or Q,

X_2 is C or Y,

X_3 is D, I, N, S or Y,

X_4 is F, I or L,

X_5 is A, S or T;

$QQX_1X_2X_3X_4PX_5X_6X_7$ (SEQ ID NO:1050), wherein

X_1 is H or Y,

X_2 is G or N,

X_3 is N or S,

X_4 is S or W,

X_5 is P or no amino acid,

X_6 is R or W,

X_7 is S or T; or

$X_1QYX_2X_3X_4X_5X_6X_7F$ (SEQ ID NO:1051), wherein

X_1 is H or Q,

X_2 is F or Y,

X_3 is G, I or S,

X_4 is F, I or T,

X_5 is M, P, S or T,

X_6 is F, L, R or W,

X_7 is S or T.

[00013]The isolated antigen binding protein may also comprise B) a heavy chain complementary determining region (CDRH) selected from the group consisting of: (i) a CDRH3 selected from the group consisting of SEQ ID NOs:**332-372**; (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 following:

$X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}DX_{12}$ (SEQ ID NO:1065), wherein

X_1 is E or S,

X_2 is D, G or no amino acid,

X_3 is D, N or no amino acid,

X_4 is G or no amino acid,

X_5 is G or no amino acid,

X_6 is W, Y or no amino acid,

X_7 is I, N or Y,

X_8 is A or Y,

X_9 is G, V or Y,

X_{10} is A, F or G,

X_{11} is F, L or M,

X_{12} is V or Y;

$QX_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}YX_{12}X_{13}X_{14}DX_{15}$ (SEQ ID NO:1066), wherein

X_1 is G or no amino acid,

X_2 is K, L or Y,

X_3 is A, G or S,

X_4 is S, V or Y,

X_5 is A or G,

X_6 is G or no amino acid,

X_7 is T or no amino acid,

X_8 is S or no amino acid,

X_9 is Y or no amino acid,

X_{10} is W or Y,

X_{11} is G, S or Y,

X_{12} is F or Y,

X_{13} is G or no amino acid,

X_{14} is M or no amino acid,

X_{15} is V or Y;

$X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}$ (SEQ ID NO:1067), wherein

X_1 is D, G, L, S or no amino acid,

X_2 is G, H, W, Y or no amino acid,

X_3 is A, F, W, Y or no amino acid,

X_4 is D, G, Q, T or no amino acid,

X_5 is G, I, Q, S or no amino acid,

X_6 is A, D, N, Q, S or no amino acid,

X_7 is G, Y or no amino acid,

X_8 is D, Y or no amino acid,

X_9 is Y or no amino acid,

X_{10} is A, E, N or Y,

X_{11} is G, P, T, V or Y,

X_{12} is F or I,

X_{13} is D or Q,

X_{14} is C, H, V or Y;

$X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}X_{16}X_{17}DX_{18}$ (SEQ ID NO:1068), wherein

X_1 is E, D or no amino acid,

X_2 is G, R or no amino acid,

X_3 is I, V, Y or no amino acid,

X_4 is A, G, L or N,

X_5 is A, G, V or W,

X_6 is A, N, R or T,

X_7 is G, N, P or no amino acid,

X_8 is G, T or no amino acid,

X_9 is A or no amino acid,

X_{10} is D, E or no amino acid,

X_{11} is S, Y or no amino acid,

X_{12} is G, Y or no amino acid,

X_{13} is N, Y or no amino acid,

X_{14} is Y or no amino acid,

X_{15} is D, Y or no amino acid,

X_{16} is A, G or no amino acid,

X_{17} is F or M,

X_{18} is I, V or Y;

$X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}X_{16}X_{17}X_{18}X_{19}X_{20}X_{21}X_{22}X_{23}$ (SEQ ID NO:1069), wherein

X_1 is A, D, G, S or T,

X_2 is A, E, G, L, N, R, Y or no amino acid,

X_3 is A, G, L, N, R, T, Y or no amino acid,

X_4 is D, G, R, S, V, Y or no amino acid,

X_5 is A, G, I, S, V, Y or no amino acid,

X_6 is F, G, L, R, V or no amino acid,

X_7 is L, T, Y or no amino acid,

X_8 is Y or no amino acid,

X_9 is Y or no amino acid,

X_{10} is D or no amino acid,

X_{11} is S or no amino acid,

X_{12} is S or no amino acid,

X_{13} is G or no amino acid,

X_{14} is D, L, M, S, Y or no amino acid,

X_{15} is H, I, P, V, W or no amino acid,

X_{16} is F, G, L, R, S, Y or no amino acid,

X_{17} is D, F, V, W, Y or no amino acid,

X_{18} is C, F, L, P, S or Y,

X_{19} is D, F, G or Y,

X_{20} is A, C, G, P, R, V or Y,

X_{21} is F, L, M, S or no amino acid,

X_{22} is A, D or no amino acid,

X_{23} is I, L, V, Y or no amino acid;

$X_1YSSGWX_2X_3YGX_4X_5DX_6$ (SEQ ID NO:1070), wherein

X_1 is M or V,

X_2 is S or no amino acid,

X_3 is F or no amino acid,

X_4 is V or no amino acid,

X_5 is F or M,

X_6 is V or Y; or

$RX_1X_2X_3PFX_4Y$ (SEQ ID NO:1071), wherein

X_1 is G, H, L, N or R,

X_2 is E, T or W,

X_3 is L, N, T or V,

X_4 is D or E.

[00014]In another aspect, the isolated antigen binding protein may further comprise A) a CDRL selected from: (i) a CDRL1 selected from SEQ ID NOs:**189-217**; (ii) a CDRL1 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; or (iii) a CDRL1 amino acid sequence from the following:

$X_1SSQSLX_2X_3SDGX_4TYLX_5$ (SEQ ID NO:1035), wherein

X_1 is K or R,

X_2 is L or V,

X_3 is H or Y,

X_4 is K or N,

X_5 is N, S or Y;

$RASQX_1ISX_2YLN$ (SEQ ID NO:1036), wherein

X_1 is R, S or T,

X_2 is R or S;

$RASQX_1IX_2X_3X_4LX_5$ (SEQ ID NO:1037), wherein

X_1 is D, G, S or T,

X_2 is A, R or S,

X_3 is H, I, N, R, S or T,

X_4 is D, W or Y,

X_5 is A, G or N;

$QASQDIX_1X_2X_3LN$ (SEQ ID NO:1038), wherein

X_1 is S or T,

X_2 is D or N,

X_3 is S or Y;

$RASQX_1VX_2X_3X_4X_5LA$ (SEQ ID NO:1039), wherein

X_1 is S or T,

X_2 is I or S,

X_3 is R or S,

X_4 is S, N or no amino acid,

X_5 is Y or no amino acid; or

$KSSQX_1X_2LX_3X_4SNNKNYLX_5$ (SEQ ID NO:1040), wherein

X_1 is N or S,

X_2 is I or V,

X_3 is D or Y,

X_4 is N, R or S,

X_5 is A or V;

(iv) a CDRL2 from the group consisting of SEQ ID NOs:**218-233**; (v) a CDRL2 that differs in amino acid sequence from the CDRL2 of (iv) by an amino acid addition, deletion or substitution of not more than two amino acids; or (vi) a CDRL2 amino acid sequence from the following:

$X_1X_2SNX_3X_4S$ (SEQ ID NO:1041), wherein

X_1 is E or K,

X_2 is I or V,

X_3 is R or W,

X_4 is D or F;

$X_1X_2SX_3LQS$ (SEQ ID NO:1042), wherein

X_1 is A or T,

X_2 is A, E or V,

X_3 is S or T;

X_1ASX_2LQS (SEQ ID NO:1043), wherein

X_1 is A or V,

X_2 is S or T;

$DASX_1LET$ (SEQ ID NO:1044), wherein

X_1 is I or N;

GASSRAT (SEQ ID NO:223); or

$WASX_1RES$ (SEQ ID NO:1045), wherein

X_1 is A or T.

[00015]The isolated antigen binding proteins may further comprise B) a CDRH from the group consisting of: (i) a CDRH1 from the group consisting of SEQ ID NOs:**275-299**; (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; (iii) a CDRH1 amino acid sequence selected from:

$GYTX_1TX_2X_3X_4X_5X_6$ (SEQ ID NO:1052), wherein

X_1 is F or L,

X_2 is E, G or S,

X_3 is H, L or Y,

X_4 is G, S or Y,

X_5 is I or M,

X_6 is H or S;

$GYX_1FTSYWIG$ (SEQ ID NO:1053), wherein

X_1 is R or S;

$GFTFX_1SX_2X_3MH$ (SEQ ID NO:1054), wherein

X_1 is R or S,

X_2 is H or Y,

X_3 is D or G;

$GFX_1FSX_2YX_3MX_4$ (SEQ ID NO:1055), wherein

X_1 is P or T,

X_2 is A, R or S,

X_3 is A or S,

X_4 is N or S;

$GX_1SX_2SX_3X_4X_5X_6X_7WX_8$ (SEQ ID NO:1056), wherein

X_1 is D or G,

X_2 is F, I or V,

X_3 is R, S or no amino acid,

X_4 is G, Y or no amino acid,

X_5 is D, G, S or no amino acid,

X_6 is A, S or Y,

X_7 is A or Y,

X_8 is N or S;

GFSLSNARMGVS (SEQ ID NO:279); or

$GFSLX_1TGGVGVG$ (SEQ ID NO:1057), wherein

X_1 is S or N;

[00016](iv) a CDRH2 selected from the group consisting of SEQ ID NOs:**300-331**; (v) a CDRH2 that differs in amino acid sequence from the CDRH2 of (iv) by an amino acid addition, deletion or substitution of not more than two amino acids; or (vi) a CDRH2 amino acid sequence from the following:

$X_1X_2X_3X_4X_5X_6GX_7TX_8X_9X_{10}QKX_{11}X_{12}$ (SEQ ID NO:1058), wherein

X_1 is S or W,

X_2 is F or I,

X_3 is D, N or S,

X_4 is A or P,

X_5 is E, N or S,

X_6 is D, N or S,

X_7 is E, G or N,

X_8 is I or N,

X_9 is C, H or Y,

X_{10} is A or T,

X_{11} is F or L,

X_{12} is D or G;

IIYPX_1DSDX_2RYSPSFQG (SEQ ID NO:1059), wherein

X_1 is D or G,

X_2 is A, I or T;

$X_1IX_2X_3DGSX_4X_5X_6YX_7DSVX_8G$ (SEQ ID NO:1060), wherein

X_1 is F or V,

X_2 is S or W,

X_3 is D, S or Y,

X_4 is I, N or T,

X_5 is K or Q,

X_6 is N, R or Y,

X_7 is A, T or V,

X_8 is K or R;

$X_1ISX_2SX_3X_4X_5X_6YYADSVKG$ (SEQ ID NO:1061), wherein

X_1 is A, H or Y,

X_2 is G, R or S,

X_3 is G or S,

X_4 is G, R or S,

X_5 is S, T or Y,

X_6 is I or T;

$X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}YX_{12}X_{13}SX_{14}KS$ (SEQ ID NO:1062), wherein

X_1 is E, R or Y,

X_2 is I or T,

X_3 is H, N or Y,

X_4 is C, H, S, T or Y,

X_5 is S or R,

X_6 is G or S,

X_7 is G, K, S or T,

X_8 is T or W,

X_9 is N or Y,

X_{10} is N or no amino acid,

X_{11} is D or no amino acid,

X_{12} is A or N,

X_{13} is P or V,

X_{14} is L or V;

X_1IFSNDEKSYSTSLKS (SEQ ID NO:1063), wherein

X_1 is H or LI; or

LIYWNX_1X_2KRYSPSLX_3S (SEQ ID NO:1064), wherein

X_1 is D or V,

X_2 is D or E,

X_3 is K or R.

[00017]In yet another embodiment, the isolated antigen binding protein described hereinabove comprises the first amino acid sequence and the second amino acid sequence, both sequences of which are covalently bonded to each other. The first amino acid sequence also comprises CDRL3 of SEQ ID NOs:**234-274**, CDRL2 of SEQ ID NOs:**218-233**, and CDRL1 of SEQ ID NOs:**189-217**, and the second amino acid sequence comprises said CDRH3 of SEQ ID NOs:**332-372**, CDRH2 of SEQ ID NOs:**300-331**, and CDRH1 of SEQ ID NOs:**275-299**.

[00018]In one aspect, the isolated antigen binding proteins can be 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. The antibody fragment may be a Fab fragment, a Fab' fragment, a $F(ab')_2$ fragment, a Fv fragment, a diabody, or a single chain antibody molecule. In one embodiment, the isolated antigen binding protein of the present invention is a human antibody. In another embodiment, the isolated antigen binding protein is a monoclonal antibody.

[00019]The isolated antigen binding proteins as described herein, may be of any of the following types: IgG1-, IgG2- IgG3- or IgG4-type. In one embodiment, the antigen binding protein is of

the IgG2- or IgG4- type. Furthermore, the antigen binding protein may be coupled to a labeling group. These labeling groups may be, for example, a radioisotope, radionuclide, a fluorescent group, an enzymatic group, a chemiluminescent group, a biotinyl group, or a predetermined polypeptide group.

[00020]In another embodiment, the isolated antigen binding protein is coupled to an effector group such as, for example, a radioisotope, a radionuclide, a toxin, a therapeutic group, or a chemotherapeutic group. The chemotherapeutic groups may be, for example, calicheamicin, auristatin-PE, geldanamycin, maytanasine, or derivatives thereof.

[00021]In yet another embodiment, the isolated antigen binding protein competes for binding to human HB-EGF with a antigen binding protein as described and claimed herein. This competing antigen binding protein may be, for example, 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. The antibody fragment may be, for example, a Fab fragment, a Fab' fragment, a $F(ab')_2$ fragment, a Fv fragment, a diabody, or a single chain antibody molecule. In one embodiment, the isolated binding protein is a human antibody. In another embodiment, the isolated antigen binding protein is a monoclonal antibody. In another embodiment, this isolated antigen binding protein is of the IgG1-, IgG2- IgG3- or IgG4-type. In one embodiment, the antigen binding protein is of the IgG2- or IgG4- type. In another embodiment, the antigen binding proteins as described herein can be coupled to a labeling group. Examples of labeling groups are: a radioisotope, radionuclide, a fluorescent group, an enzymatic group, a chemiluminescent group, a biotinyl group, or a predetermined polypeptide group. In another embodiment, the isolated antigen binding protein is coupled to an effector group such as, for example, a radioisotope, a radionuclide, a toxin, a therapeutic group, or a chemotherapeutic group. Examples of the therapeutic or chemotherapeutic groups include, for example, calicheamicin, auristatin-PE, geldanamycin, maytanasine, or derivatives thereof.

[00022]In one aspect, an isolated antigen binding protein is provided that reduces, at least partially, HB-EGF-mediated signal transduction.

[00023]Also presented herein is a nucleic acid molecule encoding the isolated antigen binding protein previously described, wherein the nucleic acid molecule is operably linked to a control sequence. In one aspect, a vector comprising the aforementioned nucleic acid molecule is provided. In another aspect, a host cell is provided that comprises the aforementioned nucleic acid molecule and/or vector.

[00024]In one embodiment, a method for making the antigen binding protein is provided that includes the step of preparing said antigen binding protein from a host cell that secretes said antigen binding protein.

[00025]In yet another embodiment, a pharmaceutical composition is provided comprising at least one of the aforementioned antigen binding proteins of the present invention and a pharmaceutically acceptable carrier, diluent or adjuvant. In one embodiment, the pharmaceutical composition may comprise an additional active agent, such as an anti-neoplastic agent. The anti-neoplastic agent may be, for example, an anti-tumor antibody. Examples of an anti-tumor antibody may be, for example, antibodies directed against receptor tyrosine kinase or EGFR.

[00026]In one aspect, the pharmaceutical composition is used for diagnosis, prevention or treatment of a hyperproliferative disease. In a further aspect, the hyperproliferative disease is associated with HB-EGF expression. In another aspect, the hyperproliferative disease is associated with or accompanied by a disturbed, (*e.g.*pathologically enhanced), growth factor receptor activation, wherein said pathologically enhanced growth factor receptor activation is associated with or caused by a pathological increase in the activity of a G protein and/or a G protein coupled receptor.

[00027]In one embodiment, the pharmaceutical composition comprises at least one antigen binding protein and pharmaceutically acceptable carrier, diluents and/or adjuvants for the diagnosis, prevention or treatment of cancer, such as, for example, breast cancer, gastrointestinal cancer, pancreas cancer, prostate cancer, ovarian cancer, stomach cancer, endometrial cancer, salivary gland cancer, lung cancer, kidney cancer, colon cancer, colorectal cancer, thyroid cancer, bladder cancer, glioma, melanoma, other HB-EGF expressing or overexpressing cancers, and formation of tumor metastases.

[00028]In another embodiment, antigen binding proteins as described herein are used for the manufacture of a pharmaceutical composition for the diagnosis, prevention or treatment of a hyperproliferative disease. In a further embodiment, the hyperproliferative disease is associated with HB-EGF expression.

[00029]One embodiment describes a method for diagnosing a condition associated with the expression of HB-EGF, the method comprising the step of contacting a sample an isolated antigen binding proteins as described herein, and determining the presence of HB-EGF in said sample. In a further embodiment, the condition is a hyperproliferative disease associated with HB-EGF expression.

[00030]Another aspect describes a method for preventing or treating a condition associated with the expression of HB-EGF in a patient, comprising administering to a patient in need thereof an effective amount of a antigen binding protein as described herein. In a further aspect, the condition is a hyperproliferative disease associated with HB-EGF expression. In yet another aspect, the patient is a mammalian patient.

[00031]In one embodiment, a kit is provided that comprises a antigen binding protein, a nucleic acid molecule, or a vector as described above. In a further embodiment, the kit comprises at least one further active agent, wherein the further active agent is an anti-neoplastic agent.

[00032]These and other aspects of the invention will be described in greater detail herein. Each of the aspects of the invention can encompass various embodiment of the present invention. It is therefore anticipated that each of the embodiments of the invention involving one element or combinations of elements can be included in each aspect of the invention. Other features, objects, and advantages of the present invention are apparent in the detailed description that follows.

DESCRIPTION OF THE FIGURES

[00033]FIGURES 1A-1P depict various light chain variable regions of the antigen binding proteins. The CDR1, CDR2 and CDR3 regions are indicated in boxes.

[00034]FIGURES 2A-2O depict various heavy chain variable regions of the antigen binding proteins. The CDR1, CDR2 and CDR3 regions are indicated in boxes.

[00035]FIGURES 3A-3K depict the amino acid sequences of various light chains of the antigen binding proteins.

[00036]FIGURES 4A-4O depict the amino acid sequences of various heavy chains of the antigen binding proteins.

[00037]FIGURE 5A depicts the amino acid sequence of an exemplary light chain constant region of the antigen binding proteins.

[00038]FIGURE 5B depicts the amino acid sequence of an exemplary heavy chain constant region of the antigen binding proteins.

[00039]FIGURES 6A-6F depict the amino acid sequences for various CDR regions of the light chain variable regions of the antigen binding proteins.

[00040]FIGURES 7A-7E depict the amino acid sequences for various CDR regions of the heavy chain variable regions of the antigen binding proteins.

[00041]FIGURES 8A-8H depict the amino acid sequences for various FR regions of the light chain variable regions of the antigen binding proteins.

[00042]FIGURES 9A-9F depict the amino acid sequences for various FR regions of the heavy chain variable regions of the antigen binding proteins.

[00043]FIGURES 10A and 10B depict an alignment of the amino acid sequences of the light chain variable sequences of the antigen binding proteins. The CDR1, CDR2 and CDR3 regions are shown in boxes.

[00044]FIGURES 11A and 11B depict an alignment of the amino acid sequences of the heavy chain variable sequences of the antigen binding proteins. The CDR1, CDR2 and CDR3 regions are shown in boxes.

[00045]FIGURE 12A depicts a cladogram showing the relatedness of the light chain variable regions of the antigen binding proteins.

[00046]FIGURE 12B depicts a cladogram showing the relatedness of the light chain CDRL3 regions of the antigen binding proteins.

[00047]FIGURE 12C depicts a cladogram showing the relatedness of the heavy chain variable regions of the antigen binding proteins.

[00048]FIGURES 13A-13V depict the nucleotide sequences of various light chain variable regions of the antigen binding proteins.

[00049]FIGURES 14A-14AC depict the nucleotide sequences of various heavy chain variable regions of the antigen binding proteins.

[00050]FIGURES 15A-15M depict the nucleotide sequences of the various light chains of the antigen binding proteins.

[00051]FIGURES 16A-16L depict the nucleotide sequences of the various heavy chains of the antigen binding proteins.

[00052]FIGURE 17A depicts the nucleotide sequence of the light chain constant region of the antigen binding proteins.

[00053]FIGURE 17B depicts the nucleotide sequence of the heavy chain constant region of the antigen binding proteins.

[00054]FIGURES 18A-18F depict the nucleotide sequences for various CDR regions of the light chain variable regions of the antigen binding proteins.

[00055]FIGURES 19A-19G depict the nucleotide sequences for various CDR regions of the heavy chain variable regions of the antigen binding proteins.

[00056]FIGURES 20A-20K depict the nucleotide sequences for various FR regions of the light chain variable regions of the antigen binding proteins.

[00057]FIGURES 21A-21K depict the nucleotide sequences for various FR regions of the heavy chain variable regions of the antigen binding proteins.

[00058]FIGURE 22A graphically illustrates the degree to which different anti-HB-EGF IgG2 antibody preparations provided herein inhibit HB-EGF-induced epidermal growth factor receptor (EGFR) tyrosine phosphorylation. The results for preparations of antibodies U2-1 to U2-68 are provided. As illustrated, monoclonal antibody preparations U2-18, U2-24, U2-19 and U2-42 strongly inhibit EGFR tyrosine phosphorylation.

[00059]FIGURE 22B graphically illustrates the degree to which different anti-HB-EGF IgG4 antibody preparations provided herein inhibit HB-EGF-induced epidermal growth factor receptor (EGFR) tyrosine phosphorylation. The results for preparations of antibodies U2-2 to U2-66 are provided. As illustrated, monoclonal antibody preparations U2-39, U2-34, U2-45 and U2-6 strongly inhibit EGFR tyrosine phosphorylation.

[00060]FIGURE 23 illustrates that the antibodies inhibit lysophosphatidic acid (LPA)-induced EGFR tyrosine phosphorylation in COS-7 cells. LPA is a GPCR ligand that activates the TMPS pathway, resulting in release of HB-EGF with consequent EGFR tyrosine phosphorylation. COS-7 cells were pretreated with antibodies as indicated and stimulated with LPA, then cell lysates were prepared and lysate proteins were separated by polyacrylamide gel electrophoresis. After preparation of the blot, an anti-phosphotyrosine antibody was used to detect phosphorylated EGFR. As a control, total EGFR was detected as shown at the bottom, using a WB anti-EGFR antibody. As illustrated, anti-HB-EGF antibody preparations U2-24, U2-19 and U2-42 strongly inhibit LPA-induced EGFR phosphorylation.

[00061]FIGURE 24 graphically illustrates dose-dependent inhibition of HB-EGF-induced EGF receptor tyrosine phosphorylation by various antibodies provided herein. Different concentrations of the candidate U2-39, U2-42 and U2-45 antibody preparations were preincubated with HB-EGF prior to stimulation of SCC9 squamous cancer cells and the amount of EGFR tyrosine phosphorylation was detected. As shown, antibody U2-42 and U2-39 achieved up to 111% inhibition. IC50 values determined for the antibodies were 0.167 nM (U2-39), 1 nM (U2-42) and 2 nM (U2-45), respectively.

[00062]FIGURE 25 graphically illustrates dose-dependent inhibition of thrombin-induced EGFR phosphorylation *via* TMPS in MDA-MB231 cells by anti-HB-EGF antibody preparations. MDA-MB231 cells were incubated with candidate U2-42, U2-39 and U2-45 antibody preparations in the presence of thrombin and the amount of EGFR tyrosine phosphorylation was detected using a procedure described in Example 6. As shown, antibodies U2-42 and U2-39 achieving 100% inhibition.

[00063]FIGURE 26 illustrates dose-dependent inhibition of LPA-induced EGFR tyrosine phosphorylation *via* TMPS in PPC-1 cells by anti-HB-EGF antibody preparations. PPC-1 cells were incubated with candidate U2-42, U2-39 and U2-45 antibody preparations and the amount of EGFR tyrosine phosphorylation following LPA stimulation was detected using a procedure described in Example 4. As shown, antibodies U2-42, U2-39 and U2-45 achieved 100% inhibition.

[00064]FIGURE 27 illustrates that anti-HB-EGF antibody preparations inhibited by up to 100% the induction of MDA-MB231 breast cancer cell migration by sphingosine-1-phosphate. Candidate anti-HB-EGF antibody preparations U2-42, U2-39 and U2-45 were tested for cell migration inhibition using of collagen I-coated transwells (BD Falcon, 8 μm pores). As shown, anti-HB-EGF antibody preparation U2-42 inhibited sphingosine-1-phosphate-induced MDA-MB231 cell migration by about 70% while the U2-39 and U2-45 anti-HB-EGF antibody preparations inhibited MDA-MB231 cell migration by about 100%. Thus, the anti-HB-EGF antibodies provided herein strongly inhibit MDA-MB231 cell migration.

[00065]FIGURE 28 graphically illustrates that HB-EGF-induced migration of MCF-7 breast cancer cells is inhibited by three anti-HB-EGF antibody preparations (the U2-42, the U2-39 and the U2-45 monoclonal antibody preparations).

[00066]FIGURE 29 illustrates the dose-dependent inhibition of HB-EGF-induced tyrosine phosphorylation of HER4 by anti-HB-EGF antibody preparations. U2-42.1 or U2-39.1 anti-HB-EGF antibody preparations were incubated with HB-EGF prior to stimulation and detection of HER4 tyrosine phosphorylation. As shown, 100% inhibition of HER4 tyrosine phosphorylation was observed. Note that the amount of antibody shown on the x-axis decreases logarithmically.

[00067]FIGURE 30A shows that monoclonal antibody preparations cross-react with HB-EGF from cynomolgus monkeys as assessed by flow cytometry (FACS) using HEK-293 cells transfected with a DNA vector expressing cynomolgus HB-EGF. As shown, very low X-mean values (1-2) are observed for HEK-293 control cells that were transfected with an empty vector control. In contrast, X-mean values of 250 or more were observed when HEK-293 cells were transfected with an expression cassette encoding cynomolgus monkey HB-EGF.

[00068]FIGURE 30B shows that monoclonal antibody U2-45 preparation cross-reacts with HB-EGF from mouse as assessed by flow cytometry (FACS) using HEK-293 cells transfected with a DNA vector expressing mouse HB-EGF. X-mean values of 33.7 were observed when HEK-293 cells were transfected with an expression cassette encoding mouse HB-EGF.

[00069]FIGURE 30C shows the degree of cross-reactivity of HB-EGF antibodies with amphiregulin.

[00070]FIGURE 31 shows that HB-EGF is expressed on human vascular endothelial cells (HUVECs), as detected by FACS analysis.

[00071]FIGURES 32A - 32B show that while HB-EGF stimulates HUVEC cellular proliferation, anti-HB-EGF antibody preparations inhibited basal proliferation by about 8% to 14%. HB-EGF stimulates HUVEC cellular proliferation by about 38% (FIGURE 32A). However, upon addition of anti-HB-EGF antibody preparations U2-42, U2-39 or U2-45, basal cellular proliferation is inhibited by about 8% to 14% (FIGURE 32B).

[00072]FIGURES 33A-33L illustrate that anti-HB-EGF antibodies accelerate HUVEC tube regression. HUVEC tube formation is a model system for endothelial cell angiogenesis. FIGURES 33A-33C provide control assays that were performed without anti-HB-EGF antibodies. As shown, HUVEC cells join to form many circular structures or "tubes." FIGURES 33D-33F illustrate the effects of adding the anti-HB-EGF U2-39 antibody preparation upon tube formation. FIGURES 33G-33I illustrate the effects of adding the anti-HB-EGF U2-42 antibody preparation upon tube formation. FIGURES 33J-33L illustrate the effects of adding the anti-HB-EGF U2-45 antibody preparation upon tube formation. As shown, fewer HUVEC tubes are visible and the

network is diminished when the U2-42, U2-39 and U2-45 anti-HB-EGF antibody preparations are present.

[00073]FIGURE 33M graphically illustrates a quantitative evaluation of HUVEC tube formation after adding the anti-HB-EGF antibody preparations provided herein, supporting the utility of HB-EGF antibodies for inhibiting angiogenesis. The number of tubes or closed cell structures per microscopic field is plotted for the U2-42, U2-39 or U2-45 anti-HB-EGF antibody preparations. As shown, while approximately 10 HUVEC tubes were visible per field when no anti-HB-EGF antibodies were present, only about 4 HUVEC tubes were observed per microscopic field when the U2-39 anti-HB-EGF antibody preparation was added. In the presence of the U2-42 anti-HB-EGF antibody preparation only about 1 HUVEC tube was observed. When the U2-45 anti-HB-EGF antibody preparation was present only 6 HUVEC tubes were observed.

[00074]FIGURE 34A illustrates that anti-HB-EGF antibodies inhibit HB-EGF-stimulated colony formation of OVCAR-8 ovarian cancer cells. As shown, HB-EGF stimulated OVCAR-8 cells to form a significantly larger mean colony size than control OVCAR-8 cells cultured without HB-EGF. However, when OVCAR-8 cells were cultured with anti-HB-EGF U2-39 antibodies in the presence of HB-EGF, mean colony size was reduced to the baseline size observed for control cells without HB-EGF treatment.

[00075]FIGURE 34B illustrates that anti-HB-EGF antibodies inhibit HB-EGF-stimulated colony formation of BM1604 prostate cancer cells in soft agar. As shown, HB-EGF stimulated BM1604 cells to form a larger number of colonies per well than control BM1604 cells cultured without HB-EGF. However, when BM1604 cells were cultured with anti-HB-EGF U2-39 antibodies in the presence of HB-EGF, mean colony size was reduced to a size similar to that observed for control cells without HB-EGF treatment. Anti-HB-EGF U2-45 and U2-42 antibodies partially inhibited colony formation, while, in this assay, the U2-39 anti-HB-EGF antibody completely inhibited colony formation.

[00076]FIGURE 34C illustrates that anti-HB-EGF antibodies inhibit HB-EGF-stimulated colony formation of NCI-H226 lung carcinoma cells. As shown, HB-EGF stimulated NCI-H226 cells to form a significantly larger mean colony size than control NCI-H226 cells cultured without HB-EGF. However, when NCI-H226 cells were cultured with anti-HB-EGF U2-39 antibodies in the presence of HB-EGF, mean colony size was reduced to the baseline size observed for control cells without HB-EGF treatment.

[00077]FIGURE 34D illustrates that anti-HB-EGF antibodies inhibit basal colony formation of SkOV-3 HB-EGF clone 71 cells, derived from SkOV-3 ovarian cancer cells transfected with an HB-EGF expression vector to cause constitutive over-expression of HB-EGF. As shown, control SkOV-3 HB-EGF clone 71 cells formed large numbers of colonies. However, when SkOV-3 HB-

EGF cl. 71 cells were cultured with either anti-HB-EGF U2-42 or U2-39 antibodies, the number of colonies was dramatically reduced.

[00078]FIGURE 34E illustrates that anti-HB-EGF antibodies inhibit basal colony formation of SkOV-3 HB-EGFclone 74 cells, derived from SkOV-3 ovarian cancer cells transfected with an HB-EGF expression vector to cause constitutive over-expression of HB-EGF. As shown, control SkOV-3 HB-EGF clone 74 cells formed large numbers of colonies. However, when SkOV-3 HB-EGF clone 74 cells were cultured with anti-HB-EGF U2-39 antibodies, the number of colonies was dramatically reduced.

[00079]FIGURE 34F illustrates that anti-HB-EGF antibodies inhibit basal colony formation of BxPC3 pancreatic adenocarcinoma cells grown in soft agar. As shown, control BxPC3 cells formed large numbers of colonies. However, when BxPC3 cells were cultured with either anti-HB-EGF U2-42 or U2-39 antibodies in the presence of HB-EGF, the number of colonies was dramatically reduced.

[00080]FIGURE 35 illustrates that anti-HB-EGF antibodies inhibit basal colony formation of EFO-27 HB-EGF clone 58 ovarian cancer cells overexpressing HB-EGF grown in soft agar. As shown, control cells formed large numbers of colonies. However, when EFO-27 HB-EGF cl. 58 cells were cultured with either anti-HB-EGF U2-42, U2-39 or U2-45 antibodies the number of colonies was dramatically reduced. Moreover, combination therapy of anti-HB-EGF antibodies with the anti-EGFR antibody Erbitux completely inhibited the colony formation.

[00081]FIGURE 36 shows that anti-HB-EGF antibodies inhibit HB-EGF induced angiogenesis *in vivo*. Angiogenic network formation in a mouse matrigel plug assay could be blocked in a dose-dependent manner by antibodies U2-42, U2-39 and U2-45.

[00082]FIGURE 37 illustrates inhibition of the growth of established BxPC3 tumors in mouse xenograft models by antibodies U2-42 and U2-39.

[00083]FIGURES 38A-38C illustrate inhibition of the growth of established EFO-27 HB-EGF clone 58 tumors in mouse xenograft models by antibodies U2-42, U2-39 and U2-45 (FIGURE 38A). As shown in FIGURE 38B, efficacy of inhibition of the xenograft tumor growth by antibodies U2-42 and U2-39 was shown to be dose dependent. Moreover, combination treatment with the anti-EGFR antibody Erbitux leads to complete regression of tumor growth and shows the potent synergistic activity of the anti-HB-EGF antibodies as agents for combination therapy (FIGURE 38C).

[00084]FIGURES 39A-39B illustrate the use of the human anti-HB-EGF antibodies for detection of HB-EGF in human tissue by immunohistochemistry (FIGURE 39A) and by ELISA (FIGURE 39B).

[00085]FIGURE 40A illustrates a scratch assay indicating the inhibition of HB-EGF-induced migration of CLS354 epithelial squamous carcinoma cells (mouth).

[00086]FIGURE 40B illustrates a transmigration assay indicating the inhibition of HB-EGF-induced migration of Detroit 562 epithelial carcinoma cells (pharynx).

[00087]FIGURE 41 illustrates a spheroid-based cellular angiogenesis assay indicating the inhibition of VEGF-stimulated endothelial cell sprouting.

[00088]FIGURE 42 illustrates immunohistochemistry (IHC) analysis of human tumor xenograft samples indicating the inhibition of CD31 staining of tumor in vivo.

[00089]FIGURE 43 illustrates in vivo ovarian tumor xenograft model indicating combination treatment of U2-39 with Cisplatin and Avastin.

DETAILED DESCRIPTION

[00090]The section headings used herein are for organizational purposes only and are not to be construed as limiting the subject matter described.

[00091]Unless otherwise defined herein, scientific and technical terms used in connection with the present application shall have the meanings that are commonly understood by those of ordinary skill in the art. Further, unless otherwise required by context, singular terms shall include pluralities and plural terms shall include the singular.

[00092]Generally, nomenclatures used in connection with, and techniques of, cell and tissue culture, molecular biology, immunology, microbiology, genetics and protein and nucleic acid chemistry and hybridization described herein are those well known and commonly used in the art. The methods and techniques of the present application are 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 unless otherwise indicated. *See, e.g.,* Sambrook *et al.*, Molecular Cloning: A Laboratory Manual, 3rd ed., Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y. (2001) and Ausubel *et al.*, Current Protocols in Molecular Biology, Greene Publishing Associates (1992), and Harlow and Lane Antibodies: A Laboratory Manual Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y. (1990), which are incorporated herein by reference. Enzymatic reactions and purification techniques are performed according to manufacturer's specifications, as commonly accomplished in the art or as described herein. The terminology used 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.

[00093]It should be understood that this invention is not limited to the particular methodology, protocols, and reagents, etc., described herein and as such may vary. The terminology used

herein is for the purpose of describing particular embodiments only, and is not intended to limit the scope of the disclosed, which is defined solely by the claims.

[00094]Other than in the operating examples, or where otherwise indicated, all numbers expressing quantities of ingredients or reaction conditions used herein should be understood as modified in all instances by the term "about." The term "about" when used in connection with percentages may mean ±1%.

[00095]

A. General Overview

[00096]Antigen binding proteins that bind HB-EGF protein, in particular human HB-EGF (hHB-EGF) protein are provided herein. The antigen binding proteins provided are polypeptides into which one or more complementary determining regions (CDRs), as described herein, are embedded and/or joined. 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 general, antigen binding proteins that are provided can interfere with, block, reduce or modulate the interaction between HB-EGF and its cognate receptors, including EGF-R and HER4.

[00097]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. The various structures are further described herein below.

[00098]The antigen binding proteins provided herein have been demonstrated to bind to several epitopes of HB-EGF, in particular human HB-EGF. As demonstrated in the examples, the ability of HB-EGF to bind to its cognate receptors is reduced or inhibited. As a consequence, the antigen binding proteins provided herein are capable of inhibiting the activity of HB-EGF. In particular, antigen binding proteins binding to these epitopes can have one or more of the following activities: inhibiting, *inter alia*, EGF-R and HER4 autophosphorylation, induction of EGF-R and HER4 signal transduction pathway, EGF-R and HER4 induced cell growth, and other physiological effects induced by EGF-R and HER4 upon HB-EGF binding.

[00099]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 HB-EGF, in particular hHB-EGF and in screening assays to identify pof such receptors. In additiojn, the disclosed antigen binding proteins may be used for the diagnosis

and/or treatment of disease, such as proliferative disorders. These include, but are not limited to, various types of cancer.

B. Heparin-Binding Epidermal Growth Factor-like Growth Factor (HB-EGF)

[000100]HB-EGF is produced by various tumor cells and acts as an autocrine tumor growth factor. Davis-Fleischer *et al.*, 1998, *Front Biosci.* 3:288-299; Iwamoto & Mekada, 2000, *Cytokine Growth Factor Rev.* 11:335-344. HB-EGF has a strong affinity for heparin which can increase the biological activity of HB-EGF. HB-EGF is produced as a transmembrane protein which is proteolytically cleaved by metalloproteinases to yield the mature soluble form of the growth factor.

[000101]HB-EGF was first identified from supernatants of cultured human macrophages in a soluble, secreted form. On human cells, the precursor proHB-EGF, acts as the diphtheria toxin receptor. Various cell types, including epithelial cells, keratinocytes, monocytes, mesangial cells, lymphoid cells, and skeletal muscle cells, produce HB-EGF. It is a potent mitogen and chemotactic factor for epithelial cells, fibroblasts, smooth muscle cells and various human cancer cells.

[000102]The transmembrane form of HB-EGF is synthesized by many cell types as a 208-amino acid transmembrane precursor (tm-HB-EGF) containing EGF, heparin-binding, transmembrane, and cytoplasmic domains. The extracellular domain can be released as a 12- to 22-kDa soluble form of HB-EGF (sol-HB-EGF) through the action of metalloproteinases, which is regulated by different G protein-coupled receptors (GPCRs) or tumor promoters such as tetradecanoyl phorbol acetate (TPA). Typically, a substantial amount of transmembrane HB-EGF precursor remains uncleaved on the cell surface.

[000103]Both tm-HB-EGF and sol-HB-EGF are biologically active. The biological functions of both sol- and tm-HB-EGF are mediated by the EGF receptor (EGFR; HER1) and ErbB4 (HER4). Activation of these types of these receptors is believed to occur as a consequence of ligand-induced receptor homo- or hetero-dimerization. Upon activation, the EGF receptor has been demonstrated to increase cell growth, increase cell motility, inhibit apoptosis and increase cellular transformation.

[000104]EGFR-dependent signaling pathways can be transactivated upon stimulation of G-protein-coupled receptors (GPCR). Ligand activation of heterotrimeric G proteins by interaction with a GPCR results in an intracellular signal that induces the extracellular activity of a transmembrane metalloproteinase. Ligands that activate the GPCR pathway include LPA (lysophosphatidic acid), thrombin, carbachol, bombesin, and endothelin. Such activation leads to extracellular processing of a transmembrane growth factor precursor and release of the mature factor which, directly or through the proteoglycan matrix, interacts with the ectodomain of

EGFR and activates it through tyrosine phosphorylation. *See*, Prenzel *et al.*, 1999, *Nature* 402:884-888. Thus, HB-EGF is a component of a triple membrane-passing signal (TMPS) mechanism whereby a GPCR activates a membrane-bound metalloproteinase, which cleaves proHB-EGF to release the soluble growth factor, which subsequently activates the EGF receptor. EGFR transactivation has been linked to various disease states such as cardiac hypertrophy (reviewed in Shah BH, Catt KJ. Trends Pharmacol Sci. 2003 May;24(5):239-244), vascular remodeling (reviewed in Eguchi *et al.*, 2003, *Biochem Soc Trans. 2003 Dec;31(Pt 6):1198-202.*) and cancer (reviewed in Fischer *et al.*, 2003, *supra*).

[000105]Sequences for HB-EGF proteins and nucleic acids encoding those proteins are available to one of skill in the art. For example, such HB-EGF sequences can be found in the database provided by the National Center for Biotechnology Information (NCBI) (*see*, http://www.ncbi.nlm.nih.gov/). One example of a sequence for a HB-EGF is the amino acid sequence at NCBI accession numbers NM 001945 and NP_001936 (gi:4503413). This sequence is provided below for easy reference (SEQ ID NO:1072):

[000106]MKLLPSVVLKLFLAAVLSALVTGESLERLRRGLAAGTSNPDPPTVSTDQLLPLGGGRD RKVRDLQEADLDLLRVTLSSKPQALATPNKEEHGKRKKKGKGLGKKRDPCLRKYKDFCIHGEC KYVKELRAPSCICHPGYHGERCHGLSLPVENRLYTYDHTTILAVVAVVLSSVCLLVIVG LLMFRYHRRG GYDVENEEKVKLGMTNSH.

[000107]Note that the HB-EGF sequence shown above (SEQ ID NO:1072) has the nineteen amino acid signal peptide (MKLLPSVVLK LFLAAVLSA, SEQ ID NO:1073).

[000108]The soluble extracellular domain consists of amino acids 1-149 of the above HB-EGF sequence. This sequence for the HB-EGF soluble extracellular domain is provided below as SEQ ID NO:1074:

[000109]MKLLPSVVLKLFLAAVLSALVTGESLERLRRGLAAGTSNPDPPTVSTDQLLPLGGGRD RKVRDLQEADLDLLRVTLSSKPQALATPNKEEHGKRKKKGKGLGKKRDPCLR KYKDFCIHGECKYVKELRAPSCICHPGYHGERCHGLSLP.

[000110]Upon cleavage, a mature HB-EGF is generated that consists of amino acids 63-149 (87 amino acids). This sequence for the mature HB-EGF is provided below as SEQ ID NO:1075:

[000111]DLQEADLDLLRVTLSSKPQALATPNKEEHGKRKKKGKGLGKKRDPCLRKYKDFCIHG ECKYVKELRAPSCICHPGYHGERCHGLSLP.

[000112]HB-EGF interacts with and activates the.. epidermal growth factor receptor (EGFR). EGFR is a 170 kDa transmembrane glycoprotein consisting of an extracellular ligand-binding domain, a transmembrane region and an intracellular domain with tyrosine kinase activity. Binding of growth factors to the EGFR results in internalization of the ligand-receptor complex, autophosphorylation of the receptor and other protein substrates, leading ultimately to DNA

synthesis and cell division. The external ligand binding domain is not only stimulated by HB-EGF, but also by EGF, TGFα and amphiregulin (AR).

[000113]Overexpression of the EGFR is often accompanied by the co-expression of EGF-like growth factors, suggesting that an autocrine pathway for control of growth may play a major part in the progression of tumors. It is now widely believed that this is a mechanism by which tumor cells can escape normal physiological control.

C. HB-EGF Receptor Antigen Binding Proteins

[000114]A variety of selective binding agents useful for regulating the activity of HB-EGF are provided. These agents include, for instance, antigen binding proteins that contain an antigen binding domain (*e.g.*, single chain antibodies, domain antibodies, inmmunoadhesions, and polypeptides with an antigen binding region) and specifically bind to a HB-EGF polypeptide, in particular human HB-EGF. Some of the agents, for example, are useful in inhibiting the binding of HB-EGF to its receptors, and can thus be used to inhibit, interfere with, or modulate one or more activities associated with HB-EGF-mediated signaling.

[000115]In general, the antigen binding proteins that are provided typically comprise one or more CDRs as described herein (*e.g.*, 1, 2, 3, 4, 5 or 6). In some instances, 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 may be completely synthetic in nature. Examples of various polypeptide structures are further described below.

[000116]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.

[000117]Certain of the antigen binding proteins as provided herein specifically bind to human HB-EGF. In a specific embodiment, the antigen binding protein specifically binds to human HB-EGF protein having the amino acid sequence of SEQ ID NO:1072.

[000118]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 HB-EGF. In this case, an antigen binding protein binds specifically to and/or substantially

inhibits binding of human HB-EGF to its receptor when an excess of antibody reduces the quantity of human HB-EGF bound to its receptor, or *vice versa*, by at least about 20%, 40%, 60%, 80%, 85%, or more (for example by measuring binding in an *in vitro* competitive binding assay). HB-EGF has many distinct biological effects, which can be measured in many different assays in different cell types; examples of such assays are provided herein.

1. Naturally Occurring Antibody Structure

[000119]Some of the antigen binding proteins that are provided have the structure typically associated with naturally occurring antibodies. The structural units of these antibodies typically comprise one or more tetramers, each composed of two identical couplets of polypeptide chains, though some species of mammals also produce antibodies having only a single heavy chain. In a typical antibody, each pair or couplet includes one full-length "light" chain (in certain embodiments, about 25 kDa) and one full-length "heavy" chain (in certain embodiments, about 50-70 kDa). Each individual immunoglobulin chain is composed of several "immunoglobulin domains", each consisting of roughly 90 to 110 amino acids and expressing a characteristic folding pattern. These domains are the basic units of which antibody polypeptides are composed. The amino-terminal portion of each chain typically includes a variable domain that is responsible for antigen recognition. The carboxy-terminal portion is more conserved evolutionarily than the other end of the chain and is referred to as the "constant region" or "C region". Human light chains generally are classified as kappa and lambda light chains, and each of these contains one variable domain and one constant domain. Heavy chains are typically classified as mu, delta, gamma, alpha, or epsilon chains, and these define the antibody's isotype as IgM, IgD, IgG, IgA, and IgE, respectively. IgG has several subtypes, including, but not limited to, IgG1, IgG2, IgG3, and IgG4. IgM subtypes include IgM1, and IgM2. IgA subtypes include IgA1 and IgA2. 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 may 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, the HB-EGF antibody is of the IgG1, IgG2, or IgG4 subtype.

[000120]In full-length light and heavy chains, the variable and constant regions are joined by a "J" region of about twelve or more amino acids, with the heavy chain also including a "D" region of about ten more amino acids. *See, e.g.*, Fundamental Immunology, 2nd ed., Ch. 7 (Paul, W., ed.) 1989, New York: Raven Press (hereby incorporated by reference in its entirety for all

purposes). The variable regions of each light/heavy chain pair typically form the antigen binding site.

[000121]One example of a kappa Light Constant domain of an exemplary HB-EGF monoclonal antibody has the amino acid sequence:

[000122]RTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDS TYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC. (SEQ ID NO:187).

[000123]One example of an IgG2 heavy constant domain of an exemplary HB-EGF monoclonal antibody has the amino acid sequence:

[000124]ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYS LSSVVTVPSSNFGTQTYTCNVDHKPSNTKVDKTVERKCCVECPPCPAPPVAGPSVFLFPPKPKDTLMISRT PEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVVSVLTVVHQDWLNGKEYKCKVSNKG LPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPML DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK (SEQ ID NO:188).

[000125]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 to a specific epitope on the target protein (*e.g.*, HB-EGF). 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.

[000126]The various light chain and heavy chain variable regions provided herein are depicted in FIGURES 1A-1P, and FIGURES 2A-2O, respectively. Each of these variable regions may 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 may be combined to form a complete antibody structure.

[000127]Specific examples of some of the full length light and heavy chains of the antibodies that are provided and their corresponding amino acid sequences are summarized in FIGURES 3A-3K and FIGURES 4A-4O, respectively.

[000128]Again, each of the exemplary light chains (U_L-1, U_L-2, U_L-3 etc.) listed in FIGURES 3A-3K can be combined with any of the exemplary heavy chains shown in FIGURES 4A-4O to form an antibody. Examples of such combinations include U_L-1 combined with any of U_H-1 through

U_H-58; U_L-2 combined with any of U_H-1 through U_H-58; or U_L-3 combined with any of U_H-1 through U_H-58, and so on. In some instances, the antibodies include at least one light chain and one heavy chain from those listed in FIGURES 3A-3K and FIGURES 4A-4O, respectively. In other instances, the antibodies contain two identical light chains and two identical heavy chains. As an example, an antibody or immunologically functional fragment may include two U_L-1 light chains and two U_H-1 heavy chains, or two U_L-2 light chains and two U_H-2 heavy chains, or two U_L-3 light chains and two U_H-3 heavy chains and other similar combinations of pairs of light chains and pairs of heavy chains as listed in FIGURES 3A-3K and FIGURES 4A-4O, respectively.

[000129]Other antibodies that are provided are variants of antibodies formed by combination of the heavy and light chains shown in FIGURES 3A-3K and FIGURES 4A-4O, respectively, and comprise light and/or heavy chains that each have at least 70%, 75%, 80%, 85%, 90%, 95%, 97% or 99% identity to the amino acid sequences of these chains. In some instances, such antibodies include at least one light chain and one heavy chain, whereas in other instances the variant forms contain two identical light chains and two identical heavy chains.

2. Variable Domains of Antibodies

[000130]Also provided are antigen binding proteins that contain an antibody light chain variable region selected from the group consisting of U-V_L1, U-V_L2, U-V_L3, U-V_L4, U-V_L5, U-V_L6, U-V_L7, U-V_L8, U-V_L9, U-V_L10, U-V_L11, U-V_L12, U-V_L13, U-V_L14, U-V_L15, U-V_L16, U-V_L17, U-V_L18, U-V_L19, U-V_L20, U-V_L21, U-V_L22, U-V_L23, U-V_L24, U-V_L25, U-V_L26, U-V_L27, U-V_L28, U-V_L29, U-V_L30, U-V_L31, U-V_L32, U-V_L33, U-V_L34, U-V_L35, U-V_L36, U-V_L37, U-V_L38, U-V_L39, U-V_L40, U-V_L41, U-V_L42, U-V_L43, U-V_L44, U-V_L45, U-V_L46, U-V_L47, U-V_L48, U-V_L49, U-V_L50, U-V_L51, U-V_L52, U-V_L54, U-V_L55, U-V_L56, U-V_L57, U-V_L58, U-V_L59, U-V_L60, U-V_L61, U-V_L62, U-V_L64, and U-V_L65; and/or an antibody light chain variable region selected from the group consisting of U-V_H1, U-V_H2, U-V_H3, U-V_H4, U-V_H5, U-V_H6, U-V_H7, U-V_H8, U-V_H9, U-V_H10, U-V_H11, U-V_H12, U-V_H13, U-V_H14, U-V_H15, U-V_H16, U-V_H17, U-V_H18, U-V_H19, U-V_H20, U-V_H21, U-V_H22, U-V_H23, U-V_H24, U-V_H25, U-V_H26, U-V_H27, U-V_H28, U-V_H29, U-V_H30, U-V_H31, U-V_H32, U-V_H33, U-V_H34, U-V_H35, U-V_H36, U-V_H37, U-V_H38, U-V_H39, U-V_H40, U-V_H41, U-V_H42, U-V_H43, U-V_H44, U-V_H45, U-V_H46, U-V_H47, U-V_H48, U-V_H49, U-V_H50, U-V_H51, U-V_H52, U-V_H53, U-V_H54, U-V_H55, U-V_H56, U-V_H57, and U-V_H58, as shown in FIGURES 1A-1P, and FIGURES 2A-2O, respectively, and immunologically functional fragments, derivatives, muteins and variants of these light chain and heavy chain variable regions.

[000131]Sequence alignments of the various light and heavy chain variable regions, respectively, are provided in FIGURES 10A and 10B, and FIGURES 11 A and 11B, respectively.

[000132]Antigen binding proteins of this type can generally be designated by the formula " V_Hx/ V_Ly," where "x" corresponds to the number of heavy chain variable regions and "y" corresponds to the number of the light chain variable regions (in general, x and y are each 1 or 2).

[000133]Each of the light chain variable regions listed in FIGURES 1A-1P may be combined with any of the light chain variable regions shown in FIGURES 2A-2O to form an antigen binding protein. Examples of such combinations include U-V_L1 combined with any of U-V_H1, U-V_H2, U-V_H3, U-V_H4, U-V_H5, U-V_H6, U-V_H7, U-V_H8, U-V_H9, U-V_H10, U-V_H11, U-V_H12, U-V_H13, U-V_H14, U-V_H15, U-V_H16, U-V_H17, U-V_H18, U-V_H19, U-V_H20, U-V_H21, U-V_H22, U-V_H23, U-V_H24, U-V_H25, U-V_H26, U-V_H27, U-V_H28, U-V_H29, U-V_H30, U-V_H31, U-V_H32, U-V_H33, U-V_H34, U-V_H35, U-V_H36, U-V_H37, U-V_H38, U-V_H39, U-V_H40, U-V_H41, U-V_H42, U-V_H43, U-V_H44, U-V_H45, U-V_H46, U-V_H47, U-V_H48, U-V_H49, U-V_H50, U-V_H51, U-V_H52, U-V_H53, U-V_H54, U-V_H55, U-V_H56, U-V_H57, or U-V_H58, or U-V_L2 combined with any of U-V_H1, U-V_H2, U-V_H3, U-V_H4, U-V_H5, U-V_H6, U-V_H7, U-V_H8, U-V_H9, U-V_H10, U-V_H11, U-V_H12, U-V_H13, U-V_H14, U-V_H15, U-V_H16, U-V_H17, U-V_H18, U-V_H19, U-V_H20, U-V_H21, U-V_H22, U-V_H23, U-V_H24, U-V_H25, U-V_H26, U-V_H27, U-V_H28, U-V_H29, U-V_H30, U-V_H31, U-V_H32, U-V_H33, U-V_H34, U-V_H35, U-V_H36, U-V_H37, U-V_H38, U-V_H39, U-V_H40, U-V_H41, U-V_H42, U-V_H43, U-V_H44, U-V_H45, U-V_H46, U-V_H47, U-V_H48, U-V_H49, U-V_H50, U-V_H51, U-V_H52, U-V_H53, U-V_H54, U-V_H55, U-V_H56, U-V_H57, or U-V_H58, etc.

[000134]In some instances, the antigen binding protein includes at least one heavy chain variable region and/or one light chain variable region from those listed in FIGURES 1A-1P, and FIGURES 2A-2O, respectively. In some instances, the antigen binding protein includes at least two different heavy chain variable regions and/or light chain variable regions from those listed in FIGURES 1A-1P, and FIGURES 2A-2O, respectively. An example of such an antigen binding protein comprises (a) one U-V_L1, and (b) one of U-V_L2, U-V_L3, U-V_L4, U-V_L5, U-V_L6, U-V_L7, U-V_L8, U-V_L9, U-V_L10, U-V_L11, U-V_L12, U-V_L13, U-V_L14, U-V_L15, U-V_L16, U-V_L17, U-V_L18, U-V_L19, U-V_L20, U-V_L21, U-V_L22, U-V_L23, U-V_L24, U-V_L25, U-V_L26, U-V_L27, U-V_L28, U-V_L29, U-V_L30, U-V_L31, U-V_L32, U-V_L33, U-V_L34, U-V_L35, U-V_L36, U-V_L37, U-V_L38, U-V_L39, U-V_L40, U-V_L41, U-V_L42, U-V_L43, U-V_L44, U-V_L45, U-V_L46, U-V_L47, U-V_L48, U-V_L49, U-V_L50, U-V_L51, U-V_L52, U-V_L54, U-V_L55, U-V_L56, U-V_L57, U-V_L58, U-V_L59, U-V_L60, U-V_L61, U-V_L62, U-V_L64, and U-V_L65. Again another example of such an antigen binding protein comprises (a) one U-V_L2, and (b) one of U-V_L1, U-V_L3, U-V_L4, U-V_L5, U-V_L6, U-V_L7, U-V_L8, U-V_L9, U-V_L10, U-V_L11, U-V_L12, U-V_L13, U-V_L14, U-V_L15, U-V_L16, U-V_L17, U-V_L18, U-V_L19, U-V_L20, U-V_L21, U-V_L22, U-V_L23, U-V_L24, U-V_L25, U-V_L26, U-V_L27, U-V_L28, U-V_L29, U-V_L30, U-V_L31, U-V_L32, U-V_L33, U-V_L34, U-V_L35, U-V_L36, U-V_L37, U-V_L38, U-V_L39, U-V_L40, U-V_L41, U-V_L42, U-V_L43, U-V_L44, U-V_L45, U-V_L46, U-V_L47, U-V_L48, U-V_L49, U-V_L50, U-V_L51, U-V_L52, U-V_L54, U-V_L55, U-V_L56, U-V_L57, U-V_L58, U-V_L59, U-V_L60, U-V_L61, U-V_L62, U-V_L64, and U-V_L65. Again another example of such an antigen binding protein comprises (a) one U-V_L3, and (b) one of U-V_L1, U-V_L2, U-V_L4, U-V_L5, U-V_L6, U-

V_L7, U-V_L8, U-V_L9, U-V_L10, U-V_L11, U-V_L12, U-V_L13, U-V_L14, U-V_L15, U-V_L16, U-V_L17, U-V_L18, U-V_L19, U-V_L20, U-V_L21, U-V_L22, U-V_L23, U-V_L24, U-V_L25, U-V_L26, U-V_L27, U-V_L28, U-V_L29, U-V_L30, U-V_L31, U-V_L32, U-V_L33, U-V_L34, U-V_L35, U-V_L36, U-V_L37, U-V_L38, U-V_L39, U-V_L40, U-V_L41, U-V_L42, U-V_L43, U-V_L44, U-V_L45, U-V_L46, U-V_L47, U-V_L48, U-V_L49, U-V_L50, U-V_L51, U-V_L52, U-V_L54, U-V_L55, U-V_L56, U-V_L57, U-V_L58, U-V_L59, U-V_L60, U-V_L61, U-V_L62, U-V_L64, and U-V_L65, etc.

[000135]Again another example of such an antigen binding protein comprises (a) one U-V_H1, and (b) one of U-V_H2, U-V_H3, U-V_H4, U-V_H5, U-V_H6, U-V_H7, U-V_H8, U-V_H9, U-V_H10, U-V_H11, U-V_H12, U-V_H13, U-V_H14, U-V_H15, U-V_H16, U-V_H17, U-V_H18, U-V_H19, U-V_H20, U-V_H21, U-V_H22, U-V_H23, U-V_H24, U-V_H25, U-V_H26, U-V_H27, U-V_H28, U-V_H29, U-V_H30, U-V_H31, U-V_H32, U-V_H33, U-V_H34, U-V_H35, U-V_H36, U-V_H37, U-V_H38, U-V_H39, U-V_H40, U-V_H41, U-V_H42, U-V_H43, U-V_H44, U-V_H45, U-V_H46, U-V_H47, U-V_H48, U-V_H49, U-V_H50, U-V_H51, U-V_H52, U-V_H53, U-V_H54, U-V_H55, U-V_H56, U-V_H57, and U-V_H58. Another example comprises (a) one U-V_H2, and (b) one of U-V_H1, U-V_H3, U-V_H4, U-V_H5, U-V_H6, U-V_H7, U-V_H8, U-V_H9, U-V_H10, U-V_H11, U-V_H12, U-V_H13, U-V_H14, U-V_H15, U-V_H16, U-V_H17, U-V_H18, U-V_H19, U-V_H20, U-V_H21, U-V_H22, U-V_H23, U-V_H24, U-V_H25, U-V_H26, U-V_H27, U-V_H28, U-V_H29, U-V_H30, U-V_H31, U-V_H32, U-V_H33, U-V_H34, U-V_H35, U-V_H36, U-V_H37, U-V_H38, U-V_H39, U-V_H40, U-V_H41, U-V_H42, U-V_H43, U-V_H44, U-V_H45, U-V_H46, U-V_H47, U-V_H48, U-V_H49, U-V_H50, U-V_H51, U-V_H52, U-V_H53, U-V_H54, U-V_H55, U-V_H56, U-V_H57, and U-V_H58. Again another example comprises (a) one U-V_H3, and (b) one of U-V_H1, U-V_H2, U-V_H4, U-V_H5, U-V_H6, U-V_H7, U-V_H8, U-V_H9, U-V_H10, U-V_H11, U-V_H12, U-V_H13, U-V_H14, U-V_H15, U-V_H16, U-V_H17, U-V_H18, U-V_H19, U-V_H20, U-V_H21, U-V_H22, U-V_H23, U-V_H24, U-V_H25, U-V_H26, U-V_H27, U-V_H28, U-V_H29, U-V_H30, U-V_H31, U-V_H32, U-V_H33, U-V_H34, U-V_H35, U-V_H36, U-V_H37, U-V_H38, U-V_H39, U-V_H40, U-V_H41, U-V_H42, U-V_H43, U-V_H44, U-V_H45, U-V_H46, U-V_H47, U-V_H48, U-V_H49, U-V_H50, U-V_H51, U-V_H52, U-V_H53, U-V_H54, U-V_H55, U-V_H56, U-V_H57, and U-V_H58, etc.

[000136]The various combinations of heavy chain variable regions may be combined with any of the various combinations of light chain variable regions.

[000137]In other instances, the antigen binding protein contains two identical light chain variable regions and/or two identical heavy chain variable regions. As an example, the antigen binding protein may be an antibody or immunologically functional fragment that includes two light chain variable regions and two heavy chain variable regions in combinations of pairs of light chain variable regions and pairs of heavy chain variable regions as listed in FIGURES 1A-1P, and FIGURES 2A-2O, respectively.

[000138]Some antigen binding proteins that are provided comprise a light chain variable domain comprising a sequence of amino acids that differs from the sequence of a light chain variable domain selected from U-V_L1, U-V_L2, U-V_L3, U-V_L4, U-V_L5, U-V_L6, U-V_L7, U-V_L8, U-V_L9, U-V_L10, U-V_L11, U-V_L12, U-V_L13, U-V_L14, U-V_L15, U-V_L16, U-V_L17, U-V_L18, U-V_L19, U-V_L20, U-V_L21, U-

V_L22, U-V_L23, U-V_L24, U-V_L25, U-V_L26, U-V_L27, U-V_L28, U-V_L29, U-V_L30, U-V_L31, U-V_L32, U-V_L33, U-V_L34, U-V_L35, U-V_L36, U-V_L37, U-V_L38, U-V_L39, U-V_L40, U-V_L41, U-V_L42, U-V_L43, U-V_L44, U-V_L45, U-V_L46, U-V_L47, U-V_L48, U-V_L49, U-V_L50, U-V_L51, U-V_L52, U-V_L54, U-V_L55, U-V_L56, U-V_L57, U-V_L58, U-V_L59, U-V_L60, U-V_L61, U-V_L62, U-V_L64, or U-V_L65 at only 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 or 15 amino acid residues, wherein each such sequence difference is independently either a deletion, insertion or substitution of one amino acid. The light chain variable region in some antigen binding proteins comprises a sequence of amino acids that has at least 70%, 75%, 80%, 85%, 90%, 95%, 97% or 99% sequence identity to the amino acid sequences of the light chain variable region of U-V_L1, U-V_L2, U-V_L3, U-V_L4, U-V_L5, U-V_L6, U-V_L7, U-V_L8, U-V_L9, U-V_L10, U-V_L11, U-V_L12, U-V_L13, U-V_L14, U-V_L15, U-V_L16, U-V_L17, U-V_L18, U-V_L19, U-V_L20, U-V_L21, U-V_L22, U-V_L23, U-V_L24, U-V_L25, U-V_L26, U-V_L27, U-V_L28, U-V_L29, U-V_L30, U-V_L31, U-V_L32, U-V_L33, U-V_L34, U-V_L35, U-V_L36, U-V_L37, U-V_L38, U-V_L39, U-V_L40, U-V_L41, U-V_L42, U-V_L43, U-V_L44, U-V_L45, U-V_L46, U-V_L47, U-V_L48, U-V_L49, U-V_L50, U-V_L51, U-V_L52, U-V_L54, U-V_L55, U-V_L56, U-V_L57, U-V_L58, U-V_L59, U-V_L60, U-V_L61, U-V_L62, U-V_L64, or U-V_L65.

[000139]Certain antibodies comprise a heavy chain variable domain comprising a sequence of amino acids that differs from the sequence of a heavy chain variable domain selected from U-V_H1, U-V_H2, U-V_H3, U-V_H4, U-V_H5, U-V_H6, U-V_H7, U-V_H8, U-V_H9, U-V_H10, U-V_H11, U-V_H12, U-V_H13, U-V_H14, U-V_H15, U-V_H16, U-V_H17, U-V_H18, U-V_H19, U-V_H20, U-V_H21, U-V_H22, U-V_H23, U-V_H24, U-V_H25, U-V_H26, U-V_H27, U-V_H28, U-V_H29, U-V_H30, U-V_H31, U-V_H32, U-V_H33, U-V_H34, U-V_H35, U-V_H36, U-V_H37, U-V_H38, U-V_H39, U-V_H40, U-V_H41, U-V_H42, U-V_H43, U-V_H44, U-V_H45, U-V_H46, U-V_H47, U-V_H48, U-V_H49, U-V_H50, U-V_H51, U-V_H52, U-V_H53, U-V_H54, U-V_H55, U-V_H56, U-V_H57, or U-V_H58 at only 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 or 15 amino acid residues, wherein each such sequence difference is independently either a deletion, insertion or substitution of one amino acid. The heavy chain variable region in some antigen binding proteins comprises a sequence of amino acids that has at least 70%, 75%, 80%, 85%, 90%, 95%, 97% or 99% sequence identity to the amino acid sequences of the heavy chain variable region of U-V_H1, U-V_H2, U-V_H3, U-V_H4, U-V_H5, U-V_H6, U-V_H7, U-V_H8, U-V_H9, U-V_H10, U-V_H11, U-V_H12, U-V_H13, U-V_H14, U-V_H15, U-V_H16, U-V_H17, U-V_H18, U-V_H19, U-V_H20, U-V_H21, U-V_H22, U-V_H23, U-V_H24, U-V_H25, U-V_H26, U-V_H27, U-V_H28, U-V_H29, U-V_H30, U-V_H31, U-V_H32, U-V_H33, U-V_H34, U-V_H35, U-V_H36, U-V_H37, U-V_H38, U-V_H39, U-V_H40, U-V_H41, U-V_H42, U-V_H43, U-V_H44, U-V_H45, U-V_H46, U-V_H47, U-V_H48, U-V_H49, U-V_H50, U-V_H51, U-V_H52, U-V_H53, U-V_H54, U-V_H55, U-V_H56, U-V_H57, or U-V_H58.

[000140]Still other antigen binding proteins, *e.g.*, antibodies or immunologically functional fragments include variant forms of a variant light chain and a variant heavy chain as just described.

3. CDRs

[000141]The antigen binding proteins disclosed herein are polypeptides into which one or more CDRs are grafted, inserted and/or joined. An antigen binding protein can have 1, 2, 3, 4, 5 or 6 CDRs. An antigen binding protein thus can have, for example, one light chain CDR1 ("CDRL1"), and/or one light chain CDR2 ("CDRL2"), and/or one light chain CDR3 ("CDRL3"), and/or one heavy chain CDR1 ("CDRH1"), and/or one heavy chain CDR2 ("CDRH2"), and/or one heavy chain CDR3 ("CDRH3"). Some antigen binding proteins inlcude both a CDRL3 and a CDRH3. Specific CDRs are identified in FIGURES 6A-6F, and FIGURES 7A-7E.

[000142]Complementarity determining regions (CDRs) and framework regions (FR) (examples of light and heavy chain FR amino acid sequences are given in FIGURES 8A-8H and FIGURES 9A-9F, respectively) of a given antibody may be identified using the system described by Kabat *et al.* in Sequences of Proteins of Immunological Interest, 5th Ed., US Dept. of Health and Human Services, PHS, NIH, NIH Publication No. 91-3242, 1991. Certain antibodies that are disclosed herein comprise one or more amino acid sequences that are identical or have substantial sequence identity to the amino acid sequences of one or more of the CDRs presented in FIGURES 6A-6F (CDRLs) and FIGURES 7A-7E (CDRHs).

[000143]The structure and properties of CDRs within a naturally occurring antibody has been described, *supra*. Briefly, in a traditional antibody, the CDRs are embedded within a framework in the heavy and light chain variable region where they constitute the regions responsible for antigen binding and recognition. A variable region comprises at least three heavy or light chain CDRs, *see, supra* (Kabat *et al.*, 1991, *Sequences of Proteins of Immunological Interest*, Public Health Service N.I.H., Bethesda, MD; *see,* also Chothia and Lesk, 1987, *J. Mol. Biol.* 196:901-917; Chothia *et al.*, 1989, *Nature* 342: 877-883), within a framework region (designated framework regions 1-4, FR1, FR2, FR3, and FR4, by Kabat *et al.*, 1991, *supra*; *see,* also Chothia and Lesk, 1987, *supra*). The CDRs provided herein, however, may not only be used to define the antigen binding domain of a traditional antibody structure, but may be embedded in a variety of other polypeptide structures, as described herein.

[000144]In one aspect, the CDRs provided are a (a) a CDRL selected from the group consisting of (i) a CDRL1 selected from the group consisting of SEQ ID NOs:189-217; (ii) a CDRL2 selected from the group consisting of SEQ ID NO:218-233; (iii) a CDRL3 selected from the group consisting of SEQ ID NO:234-274; and (iv) a CDRL of (i), (ii) and (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than five, four, three, two, or one amino acids; (B) a CDRH selected from the group consisting of (i) a CDRH1 selected from the group consisting of SEQ ID NO:275-299; (ii) a CDRH2 selected from the group consisting of SEQ ID NO:300-331; (iii) a CDRH3 selected from the group consisting of SEQ ID NO:332-372;

and (iv) a CDRLHof (i), (ii) and (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than five, four, three, two, or one amino acids amino acids.

[000145]In yet another aspect, variant forms of the CDRs are provided that have at least 80%, 85%, 90% or 95% sequence identity to a CDR sequence listed in FIGURES 6A-6F and FIGURES 7A-7E.

[000146]

[000147]In yet another aspect, the CDRs disclosed herein include consensus sequences derived from groups of related monoclonal antibodies. As described herein, a "consensus sequence" refers to amino acid sequences having conserved amino acids common among a number of sequences and variable amino acids that vary within a given amino acid sequences. The CDR consensus sequences provided include CDRs corresponding to each of CDRL1, CDRL2, CDRL3, CDRH1, CDRH2 and CDRH3.

[000148]Consensus sequences were determined using a standard phylogenic analysis approach of the CDRs corresponding to the U-V_L and U-V_H of anti-HB-EGF antibodies. First, in this approach, amino acid sequences corresponding to the entire variable domains of either U-V_L or U-V_H were converted to FASTA formatting for ease in processing comparative alignments and inferring phylogenies. Based on this comparison, each the light and heavy chain variable regions, respectivey were divided in phylogenetically related groups, *i.e.*, the light chain variable regions were devided into six groups A, B, C, D, E, and F (*see*, FIGURE 12A and 12B), and the heavy chain variable regions were ddivided into seven groups A, B, C, D, E, F, and G (*see*, FIGURE 12C). Then, within each of these groups, comparison of each of the the CDRL1, CDRL2, CDRL3, CDRH1, CDRH2, CDRH3 regions was used to define consensus collections.

[000149]Group A of the light chain CDRs includes the following consensus collections:

a. a CDRL1 of the generic formula $X_1SSQSLX_2X_3SDGX_4TYLX_5$ (SEQ ID NO:1035), wherein

X_1 is K or R,

X_2 is L or V,

X_3 is H or Y,

X_4 is K or N,

X_5 is N, S or Y.

b. a CDRL2 of the generic formula $X_1X_2SNX_3X_4S$ (SEQ ID NO:1041), wherein

X_1 is E or K,

X_2 is I or V,

X_3 is R or W,

X_4 is D or F.

c. a CDRL3 of the generic formula $X_1QX_2X_3X_4X_5PX_6X_7$ (SEQ ID NO:1046), wherein

X_1 is I or M,

X_2 is A, G or S,

X_3 is I or T,

X_4 is H or Q,

X_5 is F, L or W,

X_6 is C, I, H, L or T,

X_7 is S or T.

[000150]Group B of the light chain CDRs includes the following consensus collections:

a. a CDRL1 of the generic formula $RASQX_1ISX_2YLN$ (SEQ ID NO:1036), wherein

X_1 is R, S or T,

X_2 is R or S.

b. a CDRL2 of the generic formula $X_1X_2SX_3LQS$ (SEQ ID NO:1042), wherein

X_1 is A or T,

X_2 is A, E or V,

X_3 is S or T.

c. a CDRL3 of the generic formula $QQX_1X_2X_3X_4X_5IT$ (SEQ ID NO:1047), wherein

X_1 is I or S,

X_2 is F or Y,

X_3 is F, I, S or Y,

X_4 is A, S or T,

X_5 is P or S.

[000151]Group C of the light chain CDRs includes the following consensus collections:

a. a CDRL1 of the generic formula $RASQX_1IX_2X_3X_4LX_5$ (SEQ ID NO:1037), wherein

X_1 is D, G, S or T,

X_2 is A, R or S,

X_3 is H, I, N, R, S or T,

X_4 is D, W or Y,

X_5 is A, G or N.

b. a CDRL2 of the generic formula X_1ASX_2LQS (SEQ ID NO:1043), wherein

X_1 is A or V,

X_2 is S or T.

c. a CDRL3 of the generic formula $X_1X_2X_3X_4X_5X_6X_7X_8T$ (SEQ ID NO:1048), wherein

X_1 is L or Q,

X_2 is K, N or Q,

X_3 is A, H, S or Y,

X_4 is H, N or Y,

X_5 is N, S or T,

X_6 is A, F, I, T, V or Y,

X_7 is P or no amino acid,

X_8 is F, L or P.

[000152]Group D of the light chain CDRs includes the following consensus collections:

a. a CDRL1 of the generic formula QASQDI$X_1X_2X_3$LN (SEQ ID NO:1038), wherein

X_1 is S or T,

X_2 is D or N,

X_3 is S or Y.

b. a CDRL2 of the generic formula DASX_1LET (SEQ ID NO:1044), wherein

X_1 is I or N.

c. a CDRL3 of the generic formula QX_1X_2DX_3LPX_4X_5 (SEQ ID NO:1049), wherein

X_1 is H or Q,

X_2 is C or Y,

X_3 is D, I, N, S or Y,

X_4 is F, I or L,

X_5 is A, S or T.

[000153]Group E of the light chain CDRs includes the following consensus collections:

a. a CDRL1 of the generic formula RASQX_1V$X_2X_3X_4X_5$LA (SEQ ID NO:1039), wherein

X_1 is S or T,

X_2 is I or S,

X_3 is R or S,

X_4 is S, N or no amino acid,

X_5 is Y or no amino acid.

b. a CDRL2 of the generic formula GASSRAT (SEQ ID NO:223)

c. a CDRL3 of the generic formula QQ$X_1X_2X_3X_4$P$X_5X_6X_7$ (SEQ ID NO:1050), wherein

X_1 is H or Y,

X_2 is G or N,

X_3 is N or S,

X_4 is S or W,

X_5 is P or no amino acid,

X_6 is R or W,

X_7 is S or T.

[000154]Group F of the light chain CDRs includes the following consensus collections:

a. a CDRL1 of the generic formula KSSQX_1X_2LX_3X_4SNNKNYLX_5 (SEQ ID NO:1040), wherein

X_1 is N or S,

X_2 is I or V,

X_3 is D or Y,

X_4 is N, R or S,

X_5 is A or V.

b. a CDRL2 of the generic formula $WASX_1RES$ (SEQ ID NO:1045), wherein

X_1 is A or T.

c. a CDRL3 of the generic formula $X_1QYX_2X_3X_4X_5X_6X_7F$ (SEQ ID NO:1051), wherein

X_1 is H or Q,

X_2 is F or Y,

X_3 is G, I or S,

X_4 is F, I or T,

X_5 is M, P, S or T,

X_6 is F, L, R or W,

X_7 is S or T

[000155]Group A of the heavy chain CDRs includes the following consensus collections:

a. a CDRH1 of the generic formula $GYTX_1TX_2X_3X_4X_5X_6$ (SEQ ID NO:1052), wherein

X_1 is F or L,

X_2 is E, G or S,

X_3 is H, L or Y,

X_4 is G, S or Y,

X_5 is I or M,

X_6 is H or S.

b. a CDRH2 of the generic formula $X_1X_2X_3X_4X_5X_6GX_7TX_8X_9X_{10}QKX_{11}X_{12}$ (SEQ ID NO:1058), wherein

X_1 is S or W,

X_2 is F or I,

X_3 is D, N or S,

X_4 is A, P,

X_5 is E, N or S,

X_6 is D, N or S,

X_7 is E, G or N,

X_8 is I or N,

X_9 is C, H or Y,

X_{10} is A or T,

X_{11} is F or L,

X_{12} is D or G.

c. a CDRH3 of the generic formula $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}DX_{12}$ (SEQ ID NO:1065), wherein

X_1 is E or S,

X_2 is D, G or no amino acid,

X_3 is D, N or no amino acid,

X_4 is G or no amino acid,

X_5 is G or no amino acid,

X_6 is W, Y or no amino acid,

X_7 is I, N or Y,

X_8 is A or Y,

X_9 is G, V or Y,

X_{10} is A, F or G,

X_{11} is F, L or M,

X_{12} is V or Y.

[000156]Group B of the heavy chain CDRs includes the following consensus collections:

a. a CDRH1 of the generic formula $GYX_1FTSYWIG$ (SEQ ID NO:1053), wherein

X_1 is R or S.

b. a CDRH2 of the generic formula $IIYPX_1DSDX_2RYSPSFQG$ (SEQ ID NO:1059), wherein

X_1 is D or G,

X_2 is A, I or T.

c. a CDRH3 of the generic formula $QX_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}YX_{12}X_{13}X_{14}DX_{15}$ (SEQ ID NO:1066), wherein

X_1 is G or no amino acid,

X_2 is K, L or Y,

X_3 is A, G or S,

X_4 is S, V or Y,

X_5 is A or G,

X_6 is G or no amino acid,

X_7 is T or no amino acid,

X_8 is S or no amino acid,

X_9 is Y or no amino acid,

X_{10} is W or Y,

X_{11} is G, S or Y,

X_{12} is F or Y,

X_{13} is G or no amino acid,

X_{14} is M or no amino acid,

X_{15} is V or Y.

[000157]Group C of the heavy chain CDRs includes the following consensus collections:

a. a CDRH1 of the generic formula $GFTFX_1SX_2X_3MH$ (SEQ ID NO:1054), wherein

X_1 is R or S,

X_2 is H or Y,

X_3 is D or G.

b. a CDRH2 of the generic formula $X_1IX_2X_3DGSX_4X_5X_6YX_7DSVX_8G$ (SEQ ID NO:1060), wherein

X_1 is F or V,

X_2 is S or W,

X_3 is D, S or Y,

X_4 is I, N or T,

X_5 is K or Q,

X_6 is N, R or Y,

X_7 is A, T or V,

X_8 is K or R.

c. a CDRH3 of the generic formula $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}$ (SEQ ID NO:1067), wherein

X_1 is D, G, L, S or no amino acid,

X_2 is G, H, W, Y or no amino acid,

X_3 is A, F, W, Y or no amino acid,

X_4 is D, G, Q, T or no amino acid,

X_5 is G, I, Q, S or no amino acid,

X_6 is A, D, N, Q, S or no amino acid,

X_7 is G, Y or no amino acid,

X_8 is D, Y or no amino acid,

X_9 is Y or no amino acid,

X_{10} is A, E, N or Y,

X_{11} is G, P, T, V or Y,

X_{12} is F or I,

X_{13} is D or Q,

X_{14} is C, H, V or Y.

[000158]Group D of the heavy chain CDRs includes the following consensus collections:

a. a CDRH1 of the generic formula $GFX_1FSX_2YX_3MX_4$ (SEQ ID NO:1055), wherein

X_1 is P or T,

X_2 is A, R or S,

X_3 is A or S,

X_4 is N or S.

b. a CDRH2 of the generic formula $X_1ISX_2SX_3X_4X_5X_6YYADSVKG$ (SEQ ID NO:1061), wherein

X_1 is A, H or Y,

X_2 is G, R or S,

X_3 is G or S,

X_4 is G, R or S,

X_5 is S, T or Y,

X_6 is I or T.

c. a CDRH3 of the generic formula $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}X_{16}X_{17}DX_{18}$ (SEQ ID NO:1068), wherein

X_1 is E, D or no amino acid,

X_2 is G, R or no amino acid,

X_3 is I, V, Y or no amino acid,

X_4 is A, G, L or N,

X_5 is A, G, V or W,

X_6 is A, N, R or T,

X_7 is G, N, P or no amino acid,

X_8 is G, T, no amino acid,

X_9 is A or no amino acid,

X_{10} is D, E or no amino acid,

X_{11} is S, Y or no amino acid,

X_{12} is G, Y or no amino acid,

X_{13} is N, Y or no amino acid,

X_{14} is Y or no amino acid,

X_{15} is D, Y or no amino acid,

X_{16} is A, G or no amino acid,

X_{17} is F or M,

X_{18} is I, V or Y.

[000159]Group E of the heavy chain CDRs includes the following consensus collections:

a. a CDRH1 of the generic formula $GX_1SX_2SX_3X_4X_5X_6X_7WX_8$ (SEQ ID NO:1056), wherein

X_1 is D or G,

X_2 is F, I or V,

X_3 is R, S or no amino acid,

X_4 is G, Y or no amino acid,

X_5 is D, G, S or no amino acid,

X_6 is A, S or Y,

X_7 is A or Y,

X_8 is N or S.

b. a CDRH2 of the generic formula $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}YX_{12}X_{13}SX_{14}KS$ (SEQ ID NO:1062), wherein

X_1 is E, R or Y,

X_2 is I or T,

X_3 is H, N or Y,

X_4 is C, H, S, T or Y,

X_5 is S or R,

X_6 is G or S,

X_7 is G, K, S or T,

X_8 is T or W,

X_9 is N or Y,

X_{10} is N or no amino acid,

X_{11} is D or no amino acid,

X_{12} is A or N,

X_{13} is P or V,

X_{14} is L or V.

c. a CDRH3 of the generic formula $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}X_{16}X_{17}X_{18}X_{19}X_{20}X_{21}X_{22}X_{23}$ (SEQ ID NO:1069), wherein

X_1 is A, D, G, S or T,

X_2 is A, E, G, L, N, R, Y or no amino acid,

X_3 is A, G, L, N, R, T, Y or no amino acid,

X_4 is D, G, R, S, V, Y or no amino acid,

X_5 is A, G, I, S, V, Y or no amino acid,

X_6 is F, G, L, R, V or no amino acid,

X_7 is L, T, Y or no amino acid,

X_8 is Y or no amino acid,

X_9 is Y or no amino acid,

X_{10} is D or no amino acid,

X_{11} is S or no amino acid,

X_{12} is S or no amino acid,

X_{13} is G or no amino acid,

X_{14} is D, L, M, S, Y or no amino acid,

X_{15} is H, I, P, V, W or no amino acid,

X_{16} is F, G, L, R, S, Y or no amino acid,

X_{17} is D, F, V, W, Y or no amino acid,

X_{18} is C, F, L, P, S or Y,

X_{19} is D, F, G or Y,

X_{20} is A, C, G, P, R, V or Y,

X_{21} is F, L, M, S or no amino acid,

X_{22} is A, D or no amino acid,

X_{23} is I, L, V, Y or no amino acid.

[000160]Group F of the heavy chain CDRs includes the following consensus collections:

a. a CDRH1 of the generic formula GFSLSNARMGVS (SEQ ID NO:279).

b. a CDRH2 of the generic formula X_1IFSNDEKSYSTSLKS (SEQ ID NO:1063), wherein

X_1 is H or L.

c. a CDRH3 of the generic formula X_1YSSGWX_2X_3YGX_4X_5DX_6 (SEQ ID NO:1070), wherein

X_1 is M or V,

X_2 is S or no amino acid,

X_3 is F or no amino acid,

X_4 is V or no amino acid,

X_5 is F or M,

X_6 is V or Y.

[000161]Group G of the heavy chain CDRs includes the following consensus collections:

a. a CDRH1 of the generic formula GFSLX_1TGGVGVG (SEQ ID NO:1057), wherein

X_1 is S or N.

b. a CDRH2 of the generic formula LIYWNX_1X_2KRYSPSLX_3S (SEQ ID NO:1064), wherein

X_1 is D or V,

X_2 is D or E,

X_3 is K or R.

c. a CDRH3 of the generic formula R$X_1X_2X_3$PFX_4Y (SEQ ID NO:1071), wherein

X_1 is G, H, L, N or R,

X_2 is E, T or W,

X_3 is L, N, T or V,

X_4 is D or E.

[000162]In another approach, consensus sequences may be determined by keeping the CDRs contiguous within the same sequence corresponding to a U-V_L or U-V_H. Briefly, in this approach, amino acid sequences corresponding to the entire variable domains of either U-V_L or U-V_H are converted to FASTA formatting for ease in processing comparative alignments and inferring phylogenies. Next, framework regions of these sequences are replaced with an artificial linker sequence so that examination of the CDRs alone is 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) whilst still keeping CDRs contiguous within the same sequence corresponding to a U-V_l or U-V_H. U-V_L or U-V_H sequences of this format are 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). This program likewise generates 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 produce similar results to determine consensus sequence collections within the individual groups.

[000163]In some cases the antigen binding protein comprises at least one CDRL1, CDRL2, or CDRL3 having one of the above consensus sequences. In some cases, the antigen binding protein comprises at least one CDRH1, CDRH2, or CDRH3 having one of the above consensus sequences. In other cases, the antigen binding protein comprises at least two CDRLs according to the above consensus sequences, and/or at least two CDRHs according to the above consensus sequences. In one aspect, the CDRLs and/or CDRHs are derived from different groups. In other cases, the antigen binding protein comprises at least two CDRLs from the same group A, B, C, D, E, or F and/or at least two CDRHs from the same group A, B, C, D, E, F, or G. In other aspects, the antigen binding protein comprises all three CDRL1, CDRL2, and CDRL3 sequences from the same of the above groups A, B, C, D, E, or F, and/or all three CDRH1, CDRH2, and CDRH3 sequence from the same of the above groups A, B, C, D, E, F, or G.

[000164]

D. Exemplary Antigen Binding Proteins

[000165] According to one aspect, an isolated antigen binding protein is provided that binds HB-EGF comprising (A) one or more light chain complementary determining regions (CDRLs) selected from the group consisting of: (i) a CDRL1 selected from the group consisting of SEQ ID NO:189-217; (ii) a CDRL2 selected from the group consisting of SEQ ID NO:218-233; (iii) a

CDRL3 selected from the group consisting of SEQ ID NO:234-274; and (iv) a CDRL of (i), (ii) and (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than five, four, three, four, two or one amino acids; (B) one or more heavy chain complementary determining regions (CDRHs) selected from the group consisting of: (i) a CDRH1 selected from the group consisting of SEQ ID NO:275-299; (ii) a CDRH2 selected from the group consisting of SEQ ID NO:300-331; (iii) a CDRH3 selected from the group consisting of SEQ ID NO:332-372; and (iv) a CDRH of (i), (ii) and (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than five, four, three, four, two or one amino acids; or (C) one or more light chain CDRLs of (A); and (D) one or more heavy chain CDRHs of (B).

[000166]In yet another embodiment, the isolated antigen binding protein may comprise (A) a CDRL selected from the group consisting of (i) a CDRL1 selected from the group consisting of SEQ ID NO:189-217; (ii) a CDRL2 selected from the group consisting of SEQ ID NO:218-233; and (iii) a CDRL3 selected from the group consisting of SEQ ID NO:234-274; (B) a CDRH selected from the group consisting of (i) a CDRH1 selected from the group consisting of SEQ ID NO:275-299; (ii) a CDRH2 selected from the group consisting of SEQ ID NO:300-331; and (iii) a CDRH3 selected from the group consisting of SEQ ID NO:332-372; or (C) one or more light chain CDRLs of (A); and (D) one or more heavy chain CDRLs of (B). In one embodiment, the isolated antigen binding protein may include (A) a CDRL1 of SEQ ID NO:189-217, a CDRL2 of SEQ ID NO:218-233, and a CDRL3 of SEQ ID NO:234-274, and (B) a CDRH1 of SEQ ID NO:275-299, a CDRH2 of SEQ ID NO:300-331, and a CDRH3 of SEQ ID NO:332-372.

[000167]In another embodiment, the antigen binding protein comprises a variable light chain (V_L) has at least 80%, 85%, 90% or 95% sequence identity with an amino acid sequence selected from the group consisting of SEQ ID NO:94-141, and/or the variable heavy chain (V_H) has at least 80%, 85%, 90% or 95% sequence identity with an amino acid sequence selected from the group consisting of SEQ ID NO:142-186. In a further embodiment, the V_L is selected from the group consisting of SEQ ID NO:94-141, and/or the V_H is selected from the group consisting of SEQ ID NO:142-186.

[000168]In another aspect, also provided is an isolated antigen binding protein that specifically binds to an epitope containing at least one IHGE-containing epitope and/or EGF-like epitope of HB-EGF.

[000169]In a further aspect, there is a provision of an isolated antigen binding protein that binds HB-EGF, the antigen binding protein including (A) a light chain complementary determining region (CDRL) selected from the group consisting of (i) a CDRL3 selected from the group consisting of SEQ ID NO:234-274, (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; (iii) a CDRL3 amino acid sequence selected from the group consisting of

$X_1QX_2X_3X_4X_5PX_6X_7$ (SEQ ID NO:1046), wherein X_1 is selected from the group consisting of I and M, X_2 is selected from the group consisting of A, G and S, X_3 is selected from the group consisting of I and T, X_4 is selected from the group consisting of H and Q, X_5 is selected from the group consisting of F, L and W, X_6 is selected from the group consisting of C, I, H, L and T, X_7 is selected from the group consisting of S and T; $QQX_1X_2X_3X_4X_5IT$ (SEQ ID NO:1047), wherein X_1 is selected from the group consisting of I and S, X_2 is selected from the group consisting of F and Y, X_3 is selected from the group consisting of F, I, S and Y, X_4 is selected from the group consisting of A, S and T, X_5 is selected from the group consisting of P and S; $X_1X_2X_3X_4X_5X_6X_7X_8T$ (SEQ ID NO:1048), wherein X_1 is selected from the group consisting of L and Q, X_2 is selected from the group consisting of K, N and Q, X_3 is selected from the group consisting of A, H, S and Y, X_4 is selected from the group consisting of H, N and Y, X_5 is selected from the group consisting of N, S and T, X_6 is selected from the group consisting of A, F, I, T, V and Y, X_7 is selected from the group consisting of P and no amino acid, X_8 is selected from the group consisting of F, L and P; $QX_1X_2DX_3LPX_4X_5$ (SEQ ID NO:1049), wherein X_1 is selected from the group consisting of H and Q, X_2 is selected from the group consisting of C and Y, X_3 is selected from the group consisting of D, I, N, S and Y, X_4 is selected from the group consisting of F, I and L, X_5 is selected from the group consisting of A, S and T; $QQX_1X_2X_3X_4PX_5X_6X_7$ (SEQ ID NO:1050), wherein X_1 is selected from the group consisting of H and Y, X_2 is selected from the group consisting of G and N, X_3 is selected from the group consisting of N and S, X_4 is selected from the group consisting of S and W, X_5 is selected from the group consisting of P and no amino acid, X_6 is selected from the group consisting of R and W, X_7 is selected from the group consisting of S and T; and $X_1QYX_2X_3X_4X_5X_6X_7F$ (SEQ ID NO:1051), wherein X_1 is selected from the group consisting of H and Q, X_2 is selected from the group consisting of F and Y, X_3 is selected from the group consisting of G, I and S, X_4 is selected from the group consisting of F, I and T, X_5 is selected from the group consisting of M, P, S and T, X_6 is selected from the group consisting of F, L, R and W, X_7 is selected from the group consisting of S and T; and/or (B) a heavy chain complementary determining region (CDRH) selected from the group consisting of (i) a CDRH3 selected from the group consisting of SEQ ID NOs:332-372, (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 $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}DX_{12}$ (SEQ ID NO:1065), wherein X_1 is selected from the group consisting of E and S, X_2 is selected from the group consisting of D, G and no amino acid, X_3 is selected from the group consisting of D, N and no amino acid, X_4 is selected from the group consisting of G and no amino acid, X_5 is selected from the group consisting of G and no amino acid, X_6 is selected from the group consisting of W, Y and no amino acid, X_7 is selected from the group consisting of I, N and Y, X_8

is selected from the group consisting of A and Y, X_9 is selected from the group consisting of G, V and Y, X_{10} is selected from the group consisting of A, F and G, X_{11} is selected from the group consisting of F, L and M, X_{12} is selected from the group consisting of V and Y; $QX_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}YX_{12}X_{13}X_{14}DX_{15}$ (SEQ ID NO:1066), wherein X_1 is selected from the group consisting of G and no amino acid, X_2 is selected from the group consisting of K, L and Y, X_3 is selected from the group consisting of A, G and S, X_4 is selected from the group consisting of S, V and Y, X_5 is selected from the group consisting of A and G, X_6 is selected from the group consisting of G and no amino acid, X_7 is selected from the group consisting of T and no amino acid, X_8 is selected from the group consisting of S and no amino acid, X_9 is selected from the group consisting of Y and no amino acid, X_{10} is selected from the group consisting of W and Y, X_{11} is selected from the group consisting of G, S and Y, X_{12} is selected from the group consisting of F and Y, X_{13} is selected from the group consisting of G and no amino acid, X_{14} is selected from the group consisting of M and no amino acid, X_{15} is selected from the group consisting of V and Y; $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}$ (SEQ ID NO:1067), wherein X_1 is selected from the group consisting of D, G, L, S and no amino acid, X_2 is selected from the group consisting of G, H, W, Y and no amino acid, X_3 is selected from the group consisting of A, F, W, Y and no amino acid, X_4 is selected from the group consisting of D, G, Q, T and no amino acid, X_5 is selected from the group consisting of G, I, Q, S and no amino acid, X_6 is selected from the group consisting of A, D, X_8 is selected from the group consisting of D, Y and no amino acid, X_9 is selected from the group consisting of Y and no amino acid, X_{10} is selected from the group consisting of A, E, N and Y, X_{11} is selected from the group consisting of G, P, T, V and Y, X_{12} is se X_{14} is selected from the group consisting of C, H, V and Y; $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}X_{16}X_{17}DX_{18}$ (SEQ ID NO:1068), wherein X_1 is selected from the group consisting of E, D and no amino acid, X_2 is selected from the group consisting of G, R and no amino acid, X_3 is selected from the group consisting of I, V, Y and no amino acid, X_4 is selected from the group consisting of A, G, L and N, X_5 is selected from the group consisting of A, G, V and W, X_6 is selected from the group consisting of A, N, R and T, X_7 is selected from the group consisting of G, N, P and no amino acid, X_8 is selected from the group consisting of G, T and no amino acid, X_9 is selected from the group consisting of A and no amino acid, X_{10} is selected from the group consisting of D, E and no amino acid, X_{11} is selected from the group consisting of S, Y and no amino acid, X_{12} is selected from the group consisting of G, Y and no amino acid, X_{13} is selected from the group consisting of N, Y and no amino acid, X_{14} is selected from the group consisting of Y and no amino acid, X_{15} is selected from the group consisting of D, Y and no amino acid, X_{16} is selected from the group consisting of A, G and no amino acid, X_{17} is selected from the group consisting of F and M, X_{18} is selected from the group consisting of I, V and Y; $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}X_{16}X_{17}X_{18}X_{19}X_{20}X_{21}X_{22}X_{23}$ (SEQ ID NO:1069),

wherein X_1 is selected from the group consisting of A, D, G, S and T, X_2 is selected from the group consisting of A, E, G, L, N, R, Y and no amino acid, X_3 is selected from the group consisting of A, G, L, N, R, T, Y and no amino acid, X_4 is selected from the group consisting of D, G, R, S, V, Y and no amino acid, X_5 is selected from the group consisting of A, G, I, S, V, Y and no amino acid, X_6 is selected from the group consisting of F, G, L, R, V and no amino acid, X_7 is selected from the group consisting of L, T, Y and no amino acid, X_8 is selected from the group consisting of Y and no amino acid, X_9 is selected from the group consisting of Y and no amino acid, X_{10} is selected from the group consisting of D and no amino acid, X_{11} is selected from the group consisting of S and no amino acid, X_{12} is selected from the group consisting of S and no amino acid, X_{13} is selected from the group consisting of G and no amino acid, X_{14} is selected from the group consisting of D, L, M, S, Y and no amino acid, X_{15} is selected from the group consisting of H, I, P, V, W and no amino acid, X_{16} is selected from the group consisting of F, G, L, R, S, Y and no amino acid, X_{17} is selected from the group consisting of D, F, V, W, Y and no amino acid, X_{18} is selected from the group consisting of C, F, L, P, S and Y, X_{19} is selected from the group consisting of D, F, G and Y, X_{20} is selected from the group consisting of A, C, G, P, R, V and Y, X_{21} is selected from the group consisting of F, L, M, S and no amino acid, X_{22} is selected from the group consisting of A, D and no amino acid, X_{23} is selected from the group consisting of I, L, V, Y and no amino acid; $X_1YSSGWX_2X_3YGX_4X_5DX_6$ (SEQ ID NO:1070), wherein X_1 is selected from the group consisting of M and V, X_2 is selected from the group consisting of S and no amino acid, X_3 is selected from the group consisting of F and no amino acid, X_4 is selected from the group consisting of V and no amino acid, X_5 is selected from the group consisting of F and M, X_6 is selected from the group consisting of V and Y; and $RX_1X_2X_3PFX_4Y$ (SEQ ID NO:1071), wherein X_1 is selected from the group consisting of G, H, L, N and R, X_2 is selected from the group consisting of E, T and W, X_3 is selected from the group consisting of L, N, T and V, X_4 is selected from the group consisting of D and E.

[000170] In one embodiment, the isolated antigen binding protein further comprises (A) a CDRL selected from the group consisting of: (i) a CDRL1 selected from the group consisting of SEQ ID NO:189-217; (ii) a CDRL1 that differs in amino acid sequence from the CDRL1 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids; (iii) a CDRL1 amino acid sequence selected from the group consisting of $X_1SSQSLX_2X_3SDGX_4TYLX_5$ (SEQ ID NO:1035), wherein X_1 is selected from the group consisting of K and R, X_2 is selected from the group consisting of L and V, X_3 is selected from the group consisting of H and Y, X_4 is selected from the group consisting of K and N, X_5 is selected from the group consisting of N, S and Y; $RASQX_1ISX_2YLN$ (SEQ ID NO:1036), wherein X_1 is selected from the group consisting of R, S and T, X_2 is selected from the group consisting of R and S; $RASQX_1IX_2X_3X_4LX_5$ (SEQ ID NO:1037), wherein X_1 is selected from the group consisting of D, G, S and T, X_2 is selected from

the group consisting of A, R and S, X_3 is selected from the group consisting of H, I, N, R, S and T, X_4 is selected from the group consisting of D, W and Y, X_5 is selected from the group consisting of A, G and N; QASQDI$X_1X_2X_3$LN (SEQ ID NO:1038), wherein X_1 is selected from the group consisting of S and T, X_2 is selected from the group consisting of D and N, X_3 is selected from the group consisting of S and Y; RASQX_1V$X_2X_3X_4X_5$LA (SEQ ID NO:1039), wherein X_1 is selected from the group consisting of S and T, X_2 is selected from the group consisting of I and S, X_3 is selected from the group consisting of R and S, X_4 is selected from the group consisting of S, N and no amino acid, X_5 is selected from the group consisting of Y and no amino acid; and KSSQX_1X_2LX_3X_4SNNKNYLX_5 (SEQ ID NO:1040), wherein X_1 is selected from the group consisting of N and S, X_2 is selected from the group consisting of I and V, X_3 is selected from the group consisting of D and Y, X_4 is selected from the group consisting of N, R and S, X_5 is selected from the group consisting of A and V; or (iv) a CDRL2 selected from the group consisting of SEQ ID NO:218-233; (v) a CDRH2 that differs in amino acid sequence from the CDRL2 of (iv) by an amino acid addition, deletion or substitution of not more than two amino acids; or (vi) a CDRl2 amino acid sequence selected from the group consisting of X_1X_2SNX_3X_4S (SEQ ID NO:1041), wherein X_1 is selected from the group consisting of E and K, X_2 is selected from the group consisting of I and V, X_3 is selected from the group consisting of R and W, X_4 is selected from the group consisting of D and F; X_1X_2SX_3LQS (SEQ ID NO:1042), wherein X_1 is selected from the group consisting of A and T, X_2 is selected from the group consisting of A, E and V, X_3 is selected from the group consisting of S and T; X_1ASX_2LQS (SEQ ID NO:1043), wherein X_1 is selected from the group consisting of A and V, X_2 is selected from the group consisting of S and T; DASX_1LET (SEQ ID NO:1044), wherein X_1 is selected from the group consisting of I and N; GASSRAT (SEQ ID NO:223); and WASX_1RES (SEQ ID NO:1045), wherein X_1 is selected from the group consisting of A and T; or B) a CDRH selected from the group consisting of: (i) a CDRH1 selected from the group consisting of SEQ ID NO:275-299; (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; (iii) a CDRH1 amino acid sequence selected from the group consisting of GYTX_1T$X_2X_3X_4X_5X_6$ (SEQ ID NO:1052), wherein X_1 is selected from the group consisting of F and L, X_2 is selected from the group consisting of E, G and S, X_3 is selected from the group consisting of H, L and Y, X_4 is selected from the group consisting of G, S and Y, X_5 is selected from the group consisting of I and M, X_6 is selected from the group consisting of H and S; GYX_1FTSYWIG (SEQ ID NO:1053), wherein X_1 is selected from the group consisting of R and S; GFTFX_1SX_2X_3MH (SEQ ID NO:1054), wherein X_1 is selected from the group consisting of R and S, X_2 is selected from the group consisting of H and Y, X_3 is selected from the group consisting of D and G; GFX_1FSX_2YX_3MX_4 (SEQ ID NO:1055), wherein X_1 is selected from the group consisting of P and T, X_2 is selected from the group

consisting of A, R and S, X_3 is selected from the group consisting of A and S, X_4 is selected from the group consisting of N and S; $GX_1SX_2SX_3X_4X_5X_6X_7WX_8$ (SEQ ID NO:1056), wherein X_1 is selected from the group consisting of D and G, X_2 is selected from the group consisting of F, I and V, X_3 is selected from the group consisting of R, S and no amino acid, X_4 is selected from the group consisting of G, Y and no amino acid, X_5 is selected from the group consisting of D, G, S and no amino acid, X_6 is selected from the group consisting of A, S and Y, X_7 is selected from the group consisting of A and Y, X_8 is selected from the group consisting of N and S; GFSLSNARMGVS (SEQ ID NO:279); and $GFSLX_1TGGVGVG$ (SEQ ID NO:1057), wherein X_1 is selected from the group consisting of S and N; (iv) a CDRH2 selected from the group consisting of SEQ ID NO:300-331; (v) a CDRH2 that differs in amino acid sequence from the CDRH2 of (iv) by an amino acid addition, deletion or substitution of not more than two amino acids; or (vi) a CDRH2 amino acid sequence selected from the group consisting of $X_1X_2X_3X_4X_5X_6GX_7TX_8X_9X_{10}QKX_{11}X_{12}$ (SEQ ID NO:1058), wherein X_1 is selected from the group consisting of S and W, X_2 is selected from the group consisting of F and I, X_3 is selected from the group consisting of D, N and S, X_4 is selected from the group consisting of A and P, X_5 is selected from the group consisting of E, N and S, X_6 is selected from the group consisting of D, N and S, X_7 is selected from the group consisting of E, G and N, X_8 is selected from the group consisting of I and N, X_9 is selected from the group consisting of C, H and Y, X_{10} is selected from the group consisting of A and T, X_{11} is selected from the group consisting of F and L, X_{12} is selected from the group consisting of D and G; $IIYPX_1DSDX_2RYSPSFQG$ (SEQ ID NO:1059), wherein X_1 is selected from the group consisting of D and G, X_2 is selected from the group consisting of A, I and T; $X_1IX_2X_3DGSX_4X_5X_6YX_7DSVX_8G$ (SEQ ID NO:1060), wherein X_1 is selected from the group consisting of F and V, X_2 is selected from the group consisting of S and W, X_3 is selected from the group consisting of D, S and Y, X_4 is selected from the group consisting of I, N and T, X_5 is selected from the group consisting of K and Q, X_6 is selected from the group consisting of N, R and Y, X_7 is selected from the group consisting of A, T and V, X_8 is selected from the group consisting of K and R; $X_1ISX_2SX_3X_4X_5X_6YYADSVKG$ (SEQ ID NO:1061), wherein X_1 is selected from the group consisting of A, H and Y, X_2 is selected from the group consisting of G, R and S, X_3 is selected from the group consisting of G and S, X_4 is selected from the group consisting of G, R and S, X_5 is selected from the group consisting of S, T and Y, X_6 is selected from the group consisting of I and T; $X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}YX_{12}X_{13}SX_{14}KS$ (SEQ ID NO:1062), wherein X_1 is selected from the group consisting of E, R and Y, X_2 is selected from the group consisting of I and T, X_3 is selected from the group consisting of H, N and Y, X_4 is selected from the group consisting of C, H, S, T and Y, X_5 is selected from the group consisting of S and R, X_6 is selected from the group consisting of G and S, X_7 is selected from the group consisting of G, K, S and T, X_8 is selected

from the group consisting of T and W, X_9 is selected from the group consisting of N and Y, X_{10} is selected from the group consisting of N and no amino acid, X_{11} is selected from the group consisting of D and no amino acid, X_{12} is selected from the group consisting of A and N, X_{13} is selected from the group consisting of P and V, X_{14} is selected from the group consisting of L and V; X_1IFSNDEKSYSTSLKS (SEQ ID NO:1063), wherein X_1 is selected from the group consisting of H and LI; and LIYWNX_1X_2KRYSPSLX_3S (SEQ ID NO:1064), wherein X_1 is selected from the group consisting of D and V, X_2 is selected from the group consisting of D and E, X_3 is selected from the group consisting of K and R.

[000171]In some embodiments, at least two of, or all three of CDRL1, CDRL2, and CDRL3 sequences are derived from the same group A, B, C, D, E, or F of consensus sequences, and/or at least two, or all three of, CDRH1, CDRH2, and CDRH3 sequences are derived from the same group A, B, C, D, E, F, or G. In other cases CDRs from different consensus sequence groups are mixed and matched.

[000172]In yet another embodiment, the isolated antigen binding protein described hereinabove comprises the first amino acid sequence and the second amino acid sequence, both sequences of which are covalently bonded to each other. In a further embodiment, the first amino acid sequence of the isolated antigen binding protein includes the CDRL3 of SEQ ID NO:234-274, CDRL2 of SEQ ID NO:218-233, and CDRL1 of SEQ ID NO:189-217. On the other hand, the second amino acid sequence of the isolated antigen binding protein comprises the CDRH3 of SEQ ID NO:332-372, CDRH2 of SEQ ID NO:300-331, and CDRH1 of SEQ ID NO:275-299.

[000173]In one aspect, the isolated antigen binding proteins provided herein can be 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.

[000174]In another embodiment, the antibody fragment of the isolated antigen binding proteins provided herein can be a Fab fragment, a Fab' fragment, an $F(ab')_2$ fragment, an Fv fragment, a diabody, or a single chain antibody molecule.

[000175]In a further embodiment, the isolated antigen binding protein provided herein is a human antibody and can be of the IgG1-, IgG2- IgG3- or IgG4-type.

[000176]In yet another aspect, the isolated antigen binding protein provided herein can be coupled to a labeling group, such as radioisotope, radionuclide, a fluorescent group, an enzymatic group, a chemiluminescent group, a biotinyl group, or a predetermined polypeptide group, or an effector group, such as a radioisotope, a radionuclide, a toxin, a therapeutic group, or a chemotherapeutic group. Examples of a therapeutic or chemotherapeutic group are calicheamicin, auristatin-PE, geldanamycin, maytanasine, or derivatives thereof.

[000177]In yet other aspects, the invention includes antigen binding proteins competing with any of the above described antigen binding proteins.

[000178]As will be appreciated by those in the art, for any antigen binding protein with more than one CDR from the depicted sequences, any combination of CDRs independently selected from the depicted sequences is useful. Thus, antigen binding proteins with one, two, three, four, five or six of independently selected CDRs can be generated. However, as will be appreciated by those in the art, specific embodiments generally utilize combinations of CDRs that are non-repetitive, *e.g.*, antigen binding proteins are generally not made with two CDRH2 regions, etc.

[000179]Some of the antigen binding proteins provided are discussed in more detail below.

1. Antigen Binding Proteins And Binding Epitopes

[000180]When an antigen binding protein is said to bind an epitope within specified residues of a polypeptide, such as HB-EGF, for example, what is meant is that the antigen binding protein specifically binds to a polypeptide consisting of the specified residues (*e.g.*, a specified segment of HB-EGF). Such an antigen binding protein typically does not contact every residue within HB-EGF. Nor does every single amino acid substitution or deletion within HB-EGF, or the extracellular domain of HB-EGF, necessarily significantly affect binding affinity. Epitope specificity of an antigen binding protein can be determined in variety of ways. One approach, for example, involves testing a collection of overlapping peptides of about 15 amino acids spanning the sequence of the antigen and differing in increments of a small number of amino acids (*e.g.*, three amino acids). The peptides are immobilized within the wells of a microtiter dish. Immobilization can be effected by biotinylating one terminus of the peptides. Optionally, different samples of the same peptide can be biotinylated at the amino- and the carboxy-terminus and immobilized in separate wells for purposes of comparison. This is useful for identifying end-specific antigen binding proteins. Optionally, additional peptides can be included by terminating at a particular amino acid of interest. This approach is useful for identifying end-specific antigen binding proteins to internal fragments of HB-EGF. An antigen binding protein or immunologically functional fragment is screened for specific binding to each of the various peptides. The epitope is defined as occurring with a segment of amino acids that is common to all peptides to which the antigen binding protein shows specific binding. Details regarding a specific approach for defining an epitope are set forth in Example 23.

[000181]As demonstrated in Example 23, the antigen binding proteins provided herein are capable of binding at least one IHGE-containing epitope and/or an EGF-like domain of HB-EGF.

2. Competing Antigen Binding Proteins

[000182]In another aspect, antigen binding proteins are provided that compete with one of the exemplified antibodies or functional fragments binding to the epitope described above for specific binding to HB-EGF. Such antigen binding proteins may 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 FIGURES 1, 2, 3, 4, 6, and 7.

3. Human Antibodies and Humanization of Antibodies

[000183]In one embodiment, the HB-EGF antigen binding proteins are human or humanized antibodies. Human antibodies avoid many 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 have been generated through the introduction of functional human antibody genetic loci into a rodent, other mammal or animal so that the rodent, other mammal or animal produces fully human antibodies.

[000184]One method for generating fully human antibodies is through the use of XenoMouse® strains of mice that have been engineered to contain up to but less than 1000 kb-sized germline configured fragments of the human heavy chain locus and kappa light chain locus. *See,* Mendez *et al.*, 1997, *Nature Genetics* 15:146-156, and Green and Jakobovits, 1998, *J. Exp. Med.* 188:483-495. The XenoMouse® strains are available from Abgenix, Inc. (Fremont, CA).

[000185]The production of the XenoMouse® strains of mice is 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.

[000186]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 and Kay, U.S. Patent No. 5,591,669 and 6,023.010 to Krimpenfort and 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 and 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.

[000187]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.*, 2002, *Cloning Stem Cells* 4:91-102).

[000188]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.

E. Preparation of Antibodies

[000189]Antibodies, as described herein, were prepared through the utilization of the XenoMouse® technology, as described herein. Such mice are capable of producing human immunoglobulin molecules and antibodies and are substantially deficient in the production of murine immunoglobulin molecules and antibodies. Technologies utilized for achieving production of human antibodies are disclosed in the patents, applications, and references disclosed herein. In some embodiments, transgenic production of mice and human antibodies is performed as 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.*, 1997, *Nature Genetics* 15:146-156, the disclosure of which is hereby incorporated by reference.

[000190]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.*,HB-EGF), 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. The supernatants might also be screened for immunoreactivity against fragments of HB-EGF to further map the different antibodies for binding to domains of functional interest on HB-EGF. The antibodies may also be screened for binding to other ligand of EGFR or its family members, other related human chemokines and against the rat, the mouse, and non-human primate, such as cynomolgus monkey, orthologues of HB-EGF, the last to determine species cross-reactivity. Provided herein are methods for the production of multiple hybridoma cell lines that produce antibodies specific to HB-EGF. 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.

[000191]Alternatively, instead of being fused to myeloma cells to generate hybridomas, B cells can be directly assayed. For example, B cells can be isolated from hyperimmune XenoMouse® mice and allowed to proliferate and differentiate into antibody-secreting plasma cells. Antibodies from the cell supernatants are then screened by ELISA for reactivity against the HB-EGF immunogen. The supernatants might also be screened for immunoreactivity against fragments of HB-EGF to further map the different antibodies for binding to domains of functional interest on HB-EGF. The antibodies may also be screened for binding to other ligands of EGF receptor, or its family members, other related human chemokines and against the rat, the mouse, and non-

human primate, such as cynomolgus monkey, orthologues of HB-EGF, the last to determine species cross-reactivity. B cells from wells containing antibodies of interest may be immortalized by various methods including fusion to make hybridomas either from individual or from pooled wells, or by infection with EBV or transfection by known immortalizing genes and then plating in suitable medium. Alternatively, single plasma cells secreting antibodies with the desired specificities are then isolated using an HB-EGF-specific hemolytic plaque assay (Babcook *et al.*, 1996, *Proc. Natl. Acad. Sci. USA* 93:7843-48). Cells targeted for lysis are preferably sheep red blood cells (SRBCs) coated with the HB-EGF antigen.

[000192]As discussed, *supra*, there are a number of isotypes of antibodies including without limitation the following: human IgG1, IgG2, IgG3 and IgG4. It will be appreciated that antibodies that are generated need not initially possess such an isotype but, rather the antibody as generated can possess any isotype and that the antibody can be isotype-switched by using the molecularly cloned V region genes or cloned constant region genes or cDNAs in appropriate expression vectors using conventional molecular biological techniques that are well known in the art and then expressing the antibodies in host cells using techniques known in the art

[000193]In general, antibodies produced by the fused hybridomas were either human IgG2 heavy chains or human IgG4 heavy chains with fully human kappa chains. Antibodies can also be of other human isotypes, including IgG1 or IgG3. The antibodies possessed high affinities, typically possessing a K_D of from about 10^{-6} through about 10^{-12} M or below, when measured by solid phase and solution phase techniques. Antibodies possessing a K_D of at least 10^{-9} M are preferred to inhibit the activity of HB-EGF. Antibodies possessing a K_D of at least 10^{-10} M are also preferred to inhibit the activity of HB-EGF. Antibodies possessing a K_D of at least 10^{-11} M are also preferred to inhibit the activity of HB-EGF.

[000194]As will be appreciated, anti-HB-EGF antibodies can be expressed in cell lines other than hybridoma cell lines. Sequences encoding particular antibodies can be used to transfect a suitable mammalian host cell. During construction of appropriate vectors for transfection and subsequent expression of antibody, the antibody may be class-switched from one isotype to another, *e.g.*, IgG4 antibodies may be class-switched to IgG2, by techniques known in the art. Transfection 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.

[000195]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 high amounts of anti-HB-EGF antibodies.

[000196]Alternatively, these antibodies may be prepared from animals genetically engineered to make fully human antibodies or from an antibody display library made in bacteriophage, yeast, ribosome or *E. coli*. *See, e.g.*,Clackson *et al.*,1991, *Nature* 352:624-628, Marks *et al.*,1991, *J. Mol. Biol.* 222: 581-597, Feldhaus and Siegel, 2004, *J. Immunol. Methods.* 290:69-80, Groves and Osbourn, 2005, *Expert Opin Biol Ther.* 5:125-135 and Jostock and Dubel, 2005, *Comb Chem High Throughput Screen.* 8:127-133.

[000197]Another aspect relates to an isolated nucleic acid molecule encoding an HB-EGF antigen binding protein such as an antibody. Within the context herein, the term "isolated nucleic acid molecule", as used herein, means a polynucleotide of genomic, cDNA, or synthetic origin or some combination thereof, which by virtue of its origin, the "isolated nucleic acid molecule" (1) is not associated with all or a portion of a polynucleotide in which the "isolated polynucleotide" is found in nature, (2) is operably linked to a polynucleotide which it is not linked to in nature, or (3) does not occur in nature as part of a larger sequence. Further, the term "nucleic acid molecule", as referred to herein, means a polymeric form of nucleotides of at least 10 bases in length, either ribonucleotides or deoxynucleotides or a modified form of either type of nucleotide, such as nucleotides with modified or substituted sugar groups and the like. The term also includes single and double stranded forms of DNA. Exemplatory nucleic acids encoding antigen binding proteins or portions thereof are described in more detail, *infra*.

[000198]In a one embodiment, a nucleic acid molecule is operably linked to a control sequence. The term "control sequence", as used herein, refers to polynucleotide sequences that are necessary to effect the expression and processing of coding sequences to which they are ligated. The nature of such control sequences differs depending upon the host organism. In prokaryotes, such control sequences generally include promoters, ribosomal binding sites, and transcription termination sequences. In eukaryotes, generally, such control sequences include promoters and transcription termination sequences. The term "control sequence" is intended to include, at a minimum, all components whose presence is essential for expression and processing, and can also include additional components whose presence is advantageous, for

example, leader sequences and fusion partner sequences. Furthermore, the term "operably linked", as used herein, refers to positions of components so described which are in a relationship permitting them to function in their intended manner. Moreover, as provided herein, an expression control sequence operably linked to a coding sequence is ligated in such a way that expression of the coding sequence is achieved under conditions compatible with the expression control sequence.

[000199]A further aspect is a vector comprising a nucleic acid molecule that encodes an HB-EGF antigen binding protein provided herein. The nucleic acid molecule can be operably linked to a control sequence. Furthermore, the vector may additionally contain a replication origin or a selection marker gene. Examples of vectors that may be used are *e.g.*,plasmids, cosmids, phages, viruses, etc.

F. Antigen Binding Proteins Based On Basic Antibody Structure

[000200]As discussed, *supra*, the basic antibody structural unit is known to comprise a tetramer. Each tetramer is composed of two identical pairs of polypeptide chains, each pair having one "light" (about 25 kDa) and one "heavy" chain (about 50-70 kDa). The amino-terminal portion of each chain includes a variable region of about 100 to 110 or more amino acids primarily responsible for antigen recognition. The carboxy-terminal portion of each chain defines a constant region responsible for dimerization effector function, circulating half-life and other functions. Human light chains are classified as kappa and lambda light chains. Heavy chains are classified as mu, delta, gamma, alpha, or epsilon, and define the antibody's isotype as IgM, IgD, IgG, IgA, and IgE, respectively. Within light and heavy chains, 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*, generally, 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 form the antigen binding site of the antibody.

[000201]Thus, an intact IgG antibody has two binding sites. Except in bifunctional or bispecific antibodies, the two binding sites are the same.

[000202]The variable regions of the chains all 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 variable regions of each pair are aligned by the framework regions, enabling binding to a specific epitope on the antigen. From N-terminal to C-terminal, the variable regions of both light and heavy chains comprise the domains FR1, CDR1, FR2, CDR2, FR3, CDR3 and FR4. The assignment of amino acids to each domain is 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, 1897, *J. Mol. Biol.* 196:901-917; Chothia *et al.*, 1989, *Nature* 342:878-883.

[000203]Thus, the antibodies provided herein may include at least one variable region polypeptide chain of the formula: FR1-CDR1-FR2-CDR2-FR3-CDR3-FR4, wherein FR1 is a first human framework region, CDR1 is a first complementarity determining region, FR2 is a second human framework region, CDR2 is a second complementarity determining region, FR3 is a third human framework region, CDR3 is a third complementarity determining region, and FR4 is a fourth human framework region. The CDR3 is generally the most diverse region of the antibody variable region.

[000204]In some embodiments, the FR1 region includes but is not limited to any one of amino acid sequences SEQ ID NOs:373-393 and/or 453-469; the CDR1 region includes but is not limited to any one of amino acid sequences SEQ ID NOs:189-217 and/or 275-299; the FR2 region includes but is not limited to any one of amino acid sequences SEQ ID NOs:394-414 and/or 470-481; the CDR2 region includes but is not limited to any one of amino acid sequences SEQ ID NOs:218-233 and/or 300-331; the FR3 region includes but is not limited to any one of amino acid sequences SEQ ID NOs:415-440 and/or 482-511; the CDR3 region includes but is not limited to any one of amino acid sequences SEQ ID NOs:234-274 and/or 332-372; and the FR4 region includes but is not limited to any one of amino acid sequences SEQ ID NOs:441-452 and/or 512-517. Thus, in some embodiments, the human antibodies provided herein have one or more of the amino acid sequences provided herein.

[000205]It is to be understood, that the amino acid sequence of the antibodies provided herein is not limited to the twenty conventional amino acids (*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 example, the amino acids may include 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. Examples of unconventional amino acids, which may also be suitable components for the antibody provided, 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.

[000206]Furthermore, minor variations in the amino acid sequences shown in SEQ ID NOs:1-517 and 1035-1071 are contemplated as being encompassed, providing that the variations in the amino acid sequence maintain at least 75%, more preferably at least 80%, 90%, 95%, and most preferably 99% of the sequences shown in SEQ ID NOs:1-517 and 1035-1071. Preferred variations in the amino acid sequences shown in SEQ ID Nos:1-517 and 1035-1071, *i.e.*,

deletions, insertions and/or replacements of at least one amino acid, occur near boundaries of functional domains. Structural and functional domains can be identified by comparison of the nucleotide and/or amino acid sequence data to public or proprietary sequence databases. Computerized comparison methods can be used to identify sequence motifs or predicted protein conformation domains that occur in other antibodies of known structure and/or function. Methods to identify protein sequences that fold into a known three-dimensional structure are known. *See, e.g.*, Bowie *et al.*,1991, *Science* 253:164; *Proteins, Structures and Molecular Principles* (Creighton, Ed., W. H. Freeman and Company, New York (1984)); *Introduction to Protein Structure* (C. Branden and J. Tooze, eds., Garland Publishing, New York, N.Y. (1991)); and Thornton *et al.*, 1991, *Nature* 354:105, which are all incorporated herein by reference. Thus, those of skill in the art can recognize sequence motifs and structural conformations that may be used to define structural and functional domains.

[000207]Especially preferred variations in the amino acid sequences shown in SEQ ID NOs:1-517 and 1035-1071 are those that lead to a reduced susceptibility to proteolysis or oxidation, alter glycosylation patterns or alter binding affinities or confer or modify other physicochemical or functional properties of the antibody. In particular, conservative amino acid replacements are contemplated. Conservative replacements are those that take place within a family of amino acids that are related in their side chains. Preferred amino acid families are the following: acidic family = aspartate, glutamate; basic family = lysine, arginine, histidine; non-polar family = alanine, valine, leucine, isoleucine, proline, phenylalanine, methionine, tryptophan; and uncharged polar family = glycine, asparagine, glutamine, cysteine, serine, threonine, tyrosine. More preferred families are: aliphatic-hydroxy family = serine and threonine; amide-containing family = asparagine and glutamine; aliphatic family = alanine, valine, leucine and isoleucine; and aromatic family = phenylalanine, tryptophan, and tyrosine. For example, it is reasonable to expect that an isolated replacement of a leucine with an isoleucine or valine, an aspartate with a glutamate, a threonine with a serine, or a similar replacement of an amino acid with a structurally related amino acid will not have a major effect on the binding or properties of the resulting antibody, especially if the replacement does not involve an amino acid within a framework site. However, all other possible amino acid replacements are also encompassed. Whether an amino acid change results in a functional antibody, *i.e.*, in a antibody that binds to HB-EGF and reduces, neutralizes or substantially inhibits the function of HB-EGF, can readily be determined by assaying the specific activity of the resulting antibody in ELISA or FACS for binding to HB-EGF or *in vitro* or *in vivo* functional assay.

[000208]A reduction, neutralization or substantially inhibition of HB-EGF mediated signal transduction may be caused by influencing, *e.g.*, decreasing or inhibiting, the binding of HB-EGF to its receptor, *e.g.*, to the EGFR or HER4.

[000209]The term "antibody" or "anti-HB-EGF antibody", as used herein, means a monoclonal antibody, a polyclonal antibody, a recombinant antibody, a humanized antibody (Jones *et al.*, 1986, *Nature* 321:522-525; Riechmann *et al.*, 1988, *Nature* 332:323-329; and Presta, 1992, *Curr. Op. Struct. Biol.* 2: 593-596), a chimeric antibody (Morrison *et al.*, 1984, *Proc. Natl. Acad. Sci. U.S.A.* 81: 6851-6855), a multispecific antibody (*e.g.*,a bispecific antibody) formed from at least two antibodies, or an antibody fragment thereof. The term "antibody fragment" comprises any portion of the afore-mentioned antibodies, preferably at least one of their antigen binding or variable regions. Examples of antibody fragments include Fab fragments, Fab' fragments, $F(ab')_2$ fragments, Fv fragments, diabodies (Hollinger *et al.*, 1993, *Proc. Natl. Acad. Sci. U.S.A.* 90: 6444-6448), single chain antibody molecules (Plückthun in: The Pharmacology of Monoclonal Antibodies 113, Rosenburg and Moore, EDS, Springer Verlag, N.Y. (1994), 269-315) and other fragments as long as they exhibit the desired capability of binding to HB-EGF.

[000210]In addition, the term "antibody" or "anti-HB-EGF antibody", as used herein, may include antibody-like molecules that contain engineered sub-domains of antibodies or naturally occurring antibody variants. These antibody-like molecules may be single-domain antibodies such as VH-only or VL-only domains derived either from natural sources such as camelids (Muyldermans *et al.*, 2001, *Reviews in Molecular Biotechnology* 74, 277-302) or through *in vitro* display of libraries from humans, camelids or other species (Holt *et al.*, 2003,*Trends Biotechnol.* 21:484-90).

[000211]A "Fv fragment" is the minimum antibody fragment that contains a complete antigen-recognition and -binding site. This region consists of a dimer of one heavy- and one light-chain variable domain in tight, non-covalent association. It is in this configuration that the three CDR´s of each variable domain interact to define an antigen-binding site on the surface of the V_H-V_L dimer. Collectively, the six CDR´s confer antigen binding specificity to the antibody. However, even a single variable domain (or half of an Fv comprising only three CDR´s specific for an antigen) has the ability to recognize and bind the antigen, although usually at a lower affinity than the entire binding site. The "Fab fragment" also contains the constant domain of the light chain and the first constant domain (C_H1) of the heavy chain. The "Fab fragment" differs from the "Fab' fragment" by the addition of a few residues at the carboxy terminus of the heavy chain C_H1 domain including one or more cysteines from the antibody hinge region. The "$F(ab')_2$ fragment" originally is produced as a pair of "Fab' fragments" which have hinge cysteines between them. Methods of preparing such antibody fragments, such as papain or pepsin digestion, are known to those skilled in the art.

[000212]An antibody provided herein may fix complement (CDC) or activate antibody-dependent cellular cytotoxicity (ADCC), especially an IgG1 antibody, IgG1 variant class-switched from IgG2 or IgG4 or another isotype of human or mammalian origin, by molecular biology or generated de

novo from human IgG1 producing mice. Other methods may also be used. An antibody provided herein may sometimes be coupled to a labelling group or an effector group, *e.g.*,a toxin, chemotherapeutic agent, reporter molecule or imaging agent.

G. Further types of HB-EGF Binding Proteins

[000213]In another aspect, the HB-EGF antigen binding protein as provided herein is a scaffold protein having an antibody like binding activity, *i.e.*, binds to HB-EGF.

[000214]Within the context of the present invention, the term "scaffold protein", as used herein, means a polypeptidic framework with a high tolerance of its fold for modifications such as multiple insertions, deletions or substitutions. This intrinsic conformational stability enables the directed randomization and drastic changes within a defined region of the protein. Thus, it acquires certain novel properties, whereas its overall structural integrity and original physicochemical behaviour remains conserved. This *de novo* adopted property mostly, but not exclusively, comprises the binding specificity for a pre-defined target molecule.

[000215]Currently, a broad variety of scaffold proteins are in use that imitate the binding principle of a conventional antibody to different degrees (Hey et al., 2005, *Trends in Biotechnol.* 23:514-22). Examples of scaffold proteins that can be used in accordance with the present invention can be subdivided into different groups. Antibody related scaffolds, which are defined as derivatives of antibodies that are either naturally smaller in size and simpler in structure, or have been engineered in this way. This group includes for example so called Nanobodies (reviewed in Hey et al., Trends in Biotechnol. 2005; 23 (10); 514-522), domain antibodies (Holt et al., 2003, *Trends in Biotechnol.* 21:484-489) or shark antigen reactive proteins (Holt et al.,Trends in Biotechnol. 2003; 21; 484-489). A second group of scaffold proteins are rigid protein folds which tolerate the insertion or randomization of single loop peptides like the Kunitz-type domain (Dennis *et al.*, 1995; *J. Biol. Cell.* 270:25411-25417), huma transferrin (Ali *et al.*, 1999; *J. Biol. Cell.* 274:24066-24074) or cystein-knot structural motives (Christmann *et al.*, 1999, *Protein Eng.* 12:797-806). Proteins that share the principle of multiple hypervariable loops on a rigid conserved framework in analogy to antibodies are represented by human CTLA-4 (Hufton *et al.*, 2000 *FEBS Lett.* 475:225-231), human fibronectin type III domains (Koide *et al.*, 1998; *J. Mol. Biol.* 284:1141-1151), C-type lectin like domains or lipocalins (Skerra, 2001, *J. Biotechnol.* 74:257-275). Scaffolds with the binding specificity accomplished through aminoacid residues which are positioned partially or completely within the rigid secondary structure of the protein are for example ankyrin repeat proteins (Binz, 2003, *J. Mol. Biol.* 332:489-503), the Z domain of proteinA (Nord *et al.*, 1995, *Protein Eng.* 8:601-608) or γ-crystalline (Fiedler and Rudolph, 2001, International Patent Application WO 01/04144). Scaffold proteins and peptides and applications

thereof are reviewed in Hey *et al.*, 2005, *Trends in Biotechnol.* 23:514-522; Binz *et al.*, 2005, *Nature Biotechnol.* 23:1257-1268) and Holliger *et al.*, 2005, *Nature Biotechnol.* 23:11261136.

[000216]Engineering of a scaffold protein can be regarded as grafting or integrating an affinity function onto or into the structural framework of a polypeptidic framework with a high tolerance of its fold for modifications. Affinity function means a protein binding affinity according to the present invention. A scaffold can be structurally separable from the amino acid sequences conferring binding specificity. In general, proteins appearing suitable for the development of such artificial affinity reagents may be obtained by rational, or most commonly, combinatorial protein engineering techniques such as panning against an antigen, *e.g* , HB-EGF, either purified protein or protein displayed on the cell surface, for binding agents in an artificial scaffold library displayed in vitro, using skills which are known in the art (Skerra, 2000, *J. Mol. Recog.* Jul-Aug;13(4):167-87; Binz and Plückthun, 2005, Aug;16(4):459-69). In addition, a scaffold protein having an antibody like binding activity can be derived from an acceptor polypeptide, e.g one of the foregoing proteins, containing the scaffold domain, which can be grafted with binding domains of a donor polypeptide to confer the binding specificity of the donor polypeptide onto the scaffold domain containing the acceptor polypeptide. Said inserted binding domains may be, for example, one or more of the complementarity determining region (CDR) of an antibody, in particular an HB-EGF antibody. Preferably the CDR is a CDR3. Insertion can be accomplished by various methods known to those skilled in the art including, for example, polypeptide synthesis, nucleic acid synthesis of an encoding amino acid as well by various forms of recombinant methods well known to those skilled in the art.

H. HB-EGF Antigen Binding Protein Conjugates

[000217]In another embodiment, an HB-EGF antigen binding protein, *e.g.*,an antibody provided herein is coupled to a labelling group. Such a labelled antigen binding protein is particularly suitable for diagnostic applications. As used herein, the term "labelling group" refers to a detectable marker, *e.g.*,a radiolabelled amino acid or biotinyl moiety that can be detected by marked avidin (*e.g.*,streptavidin bound to a fluorescent marker or enzymatic activity that can be detected by optical or colorimetric methods). Various methods for labelling polypeptides and glycoproteins, such as antibodies, are known in the art and may be used. Examples of suitable labelling groups 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 groups (*e.g.*,FITC, rhodamine, lanthanide phosphors), enzymatic groups (*e.g.*, horseradish peroxidase, β-galactosidase, luciferase, alkaline phosphatase), chemiluminescent groups, biotinyl groups, or 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

respects, it may be desirable that the labelling groups are attached by spacer arms of various lengths to reduce potential steric hindrance.

[000218]Alternatively, an HB-EGF antigen binding protein provided herein, such as an antibody, may be coupled to an effector group. Such an effector-modified antigen binding protein is especially suitable for therapeutic applications. As used herein, the term "effector group" refers to a cytotoxic group such as a radioisotope or radionuclide, a toxin, a therapeutic group or other effector group known in the art. Examples for suitable effector groups are radioisotopes or radionuclides (*e.g.*, ^{3}H, ^{14}C, ^{15}N, ^{35}S, ^{90}Y, ^{99}Tc, ^{111}In, ^{125}I, ^{131}I), calicheamicin, dolastatin analogs such as auristatins, and chemotherapeutic agents such as geldanamycin and maytansine derivates, including DM1. In certain respects, it may be desirable that the effector groups are attached by spacer arms of various lengths to reduce potential steric hindrance.

[000219]Also as described herein, many of the highly useful HB-EGF antigen binding protein, *e.g.*,antibody preparations provided herein recognize epitopes within the EGF-like domain of HB-EGF, which includes residues 106-149 of the protein, for example, with the following sequence:

[000220]PCLRKYKDFCIHGECKYVKELRAPSCICHPGY HGERCHGLSLP (SEQ ID NO:1076).

In some embodiments, the epidermal pgrowth factor epitope recognized by the antigen binding proteins provided herein includes amino acid sequence IHGE. Accordingly, antibody preparations are provided that bind to and recognize an IHGE-containing epitope and/or an EGF-like domain of HB-EGF, for example, SEQ ID NO:1076.

[000221]Anti-HB-EGF antigen binding proteins are useful in the detection of HB-EGF in patient samples and accordingly are useful as diagnostics for disease states as described herein. In addition, based on their ability to significantly inhibit HB-EGF and/or EGF receptor activity (as demonstrated in the Examples below), HB-EGF antigen binding proteins have therapeutic effects in treating symptoms and conditions resulting from HB-EGF expression and/or HB-EGF activity. In specific embodiments, the antigen binding proteins and methods herein relate to the treatment of symptoms resulting from HB-EGF-associated diseases, HER4-associated diseases or EGF receptor-associated disease states, for example, cancerous conditions. Further embodiments involve using the antigen binding proteins and methods described herein to treat undesired angiogenesis, neoplastic diseases, such as, melanoma, non-small cell lung cancer, glioma, hepatocellular (liver) carcinoma, thyroid tumor, gastric (stomach) cancer, prostrate cancer, breast cancer, ovarian cancer, bladder cancer, lung cancer, glioblastoma, endometrial cancer, kidney cancer, colon cancer, and pancreatic cancer.

[000222]

I. Nucleic Acids Encoding HB-EGF Antigen Binding Proteins

[000223]Nucleic acids that encode for the antigen binding proteins described herein, or portions thereof, are also provided, including nucleic acids encoding one or both chains of an antibody, or

a fragment, derivative, mutein, or variant thereof, polynucleotides encoding heavy chain variable regions or only CDRs, polynucleotides sufficient for use as hybridization probes, PCR primers or sequencing primers for identifying, analyzing, mutating or amplifying a polynucleotide encoding a polypeptide, anti-sense nucleic acids for inhibiting expression of a polynucleotide, and complementary sequences of the foregoing. The nucleic acids can be any length. They can be, for example, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 750, 1,000, 1,500, 3,000, 5,000 or more nucleotides in length, and/or can comprise one or more additional sequences, for example, regulatory sequences and/or be part of a larger nucleic acid, for example, a vector. The nucleic acids can be single-stranded or double-stranded and can comprise RNA and/or DNA nucleotides, and artificial variants thereof (*e.g.*, peptide nucleic acids). FIGURES 15A - 15V depict the nucleotide sequences for the various light chains of the antigen binding proteins. FIGURES 16A – 16AC deptice the nucleotide sequences for the various heavy chains of the antigen binding proteins. FIGURES 13A - 13M depict the nucleotide sequences of various light chain variable regions of the antigen binding proteins. FIGURES 14A – 14L depict the nucleotide sequences of various heavy chain variable regions of the antigen binding proteins. FIGURES 18A - 18F depict the nucleotide sequences for various CDR regions of the light chain variable regions of the antigen binding proteins. FIGURES 19A-19G depict the nucleotide sequences for various CDR regions of the heavy chain variable regions of the antigen binding proteins. FIGURES 20A – 20K depict the nucleotide sequences for various FR regions of the light chain variable regions of the antigen binding proteins. FIGURES 21A – 21K depict the nucleotide sequences for various FR regions of the heavy chain, variable regions of the antigen binding proteins. FIGURE 17A depicts the nucleotide sequence of the light chain constant region of the antigen binding proteins. Finally, FIGURE 17B depicts the nucleotide sequence of the heavy chain constant region of the antigen binding proteins.

[000224]Nucleic acids encoding certain antigen binding proteins, or portions thereof (*e.g.*, full length antibody, heavy or light chain variable domain or CDRH1, CDRH2, CDRH3, CDRL1, CDRL2, or CDRL3) may be isolated from B-cells of mice that have been immunized with HB-EGF or an immunogenic fragment thereof. The nucleic acid may be isolated by conventional procedures such as polymerase chain reaction (PCR). Phage display is another example of a known technique whereby derivatives of antibodies and other antigen binding proteins may be prepared. In one approach, polypeptides that are components of an antigen binding protein of interest are expressed in any suitable recombinant expression system, and the expressed polypeptides are allowed to assemble to form antigen binding protein molecules.

[000225]An aspect further provides nucleic acids that hybridize to other nucleic acids (*e.g.*, nucleic acids comprising a nucleotide sequence depicted in FIGURES 13 through 21) under

particular hybridization conditions. Methods for hybridizing nucleic acids are well-known in the art. See, *e.g.*, Current Protocols in Molecular Biology, John Wiley & Sons, N.Y. (1989), 6.3.1-6.3.6. As defined herein, a moderately stringent hybridization condition uses a prewashing solution containing 5x sodium chloride/sodium citrate (SSC), 0.5% SDS, 1.0 mM EDTA (pH 8.0), hybridization buffer of about 50% formamide, 6x SSC, and a hybridization temperature of 55°C (or other similar hybridization solutions, such as one containing about 50% formamide, with a hybridization temperature of 42°C), and washing conditions of 60°C, in 0.5x SSC, 0.1% SDS. A stringent hybridization condition hybridizes in 6x SSC at 45°C, followed by one or more washes in 0.1 x SSC, 0.2% SDS at 68°C. Furthermore, one of skill in the art can manipulate the hybridization and/or washing conditions to increase or decrease the stringency of hybridization such that nucleic acids comprising nucleotide sequences that are at least 65%, 70%, 75%, 80%, 85%, 90%, 95%, 98% or 99% identical to each other typically remain hybridized to each other.

[000226]The basic parameters affecting the choice of hybridization conditions and guidance for devising suitable conditions are set forth by, for example, Sambrook, Fritsch, and Maniatis (2001, Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y., *supra* and Current Protocols in Molecular Biology, 1995, Ausubel *et al.*, eds., John Wiley & Sons, Inc., sections 2.10 and 6.3-6.4), and can be readily determined by those having ordinary skill in the art based on, *e.g.*, the length and/or base composition of the nucleic acid.

[000227]Changes can be introduced by mutation into a nucleic acid, thereby leading to changes in the amino acid sequence of a polypeptide (*e.g.*, an antibody or antibody derivative) that it encodes. Mutations can be introduced using any technique known in the art. In one embodiment, one or more particular amino acid residues are changed using, for example, a site-directed mutagenesis protocol. In another embodiment, one or more randomly selected residues is changed using, for example, a random mutagenesis protocol. However it is made, a mutant polypeptide can be expressed and screened for a desired property.

[000228]Mutations can be introduced into a nucleic acid without significantly altering the biological activity of a polypeptide that it encodes. For example, one can make nucleotide substitutions leading to amino acid substitutions at non-essential amino acid residues. Alternatively, one or more mutations can be introduced into a nucleic acid that selectively changes the biological activity of a polypeptide that it encodes. For example, the mutation can quantitatively or qualitatively change the biological activity. Examples of quantitative changes include increasing, reducing or eliminating the activity. Examples of qualitative changes include changing the antigen specificity of an antibody.

[000229]Another aspect provides nucleic acid molecules that are suitable for use as primers or hybridization probes for the detection of nucleic acid sequences. A nucleic acid molecule can

comprise only a portion of a nucleic acid sequence encoding a full-length polypeptide, for example, a fragment that can be used as a probe or primer or a fragment encoding an active portion (*e.g.*, a HB-EGF binding portion) of a polypeptide.

[000230]Probes based on the sequence of a nucleic acid can be used to detect the nucleic acid or similar nucleic acids, for example, transcripts encoding a polypeptide. The probe can comprise a label group, *e.g.*, a radioisotope, a fluorescent compound, an enzyme, or an enzyme co-factor. Such probes can be used to identify a cell that expresses the polypeptide.

[000231]Another aspect provides vectors comprising a nucleic acid encoding a polypeptide or a portion thereof (*e.g.*, a fragment containing one or more CDRs or one or more variable region domains). Examples of vectors include, but are not limited to, plasmids, viral vectors, non-episomal mammalian vectors and expression vectors, for example, recombinant expression vectors. The recombinant expression vectors can comprise a nucleic acid in a form suitable for expression of the nucleic acid in a host cell. The recombinant expression vectors include one or more regulatory sequences, selected on the basis of the host cells to be used for expression, which is operably linked to the nucleic acid sequence to be expressed. Regulatory sequences include those that direct constitutive expression of a nucleotide sequence in many types of host cells (*e.g.*, SV40 early gene enhancer. Rous sarcoma virus promoter and cytomegalovirus promoter), those that direct expression of the nucleotide sequence only in certain host cells (*e.g.*, tissue-specific regulatory sequences, *see*, Voss *et al.*, 1986 *Trends Biochem. Sci.* 11:287, Maniatis *et al.*, 1987, *Science* 236:1237, incorporated by reference herein in their entireties), and those that direct inducible expression of a nucleotide sequence in response to particular treatment or condition (*e.g.*, the metallothionin promoter in mammalian cells and the tet-responsive and/or streptomycin responsive promoter in both prokaryotic and eukaryotic systems (*see*, *id.*). It will be appreciated by those skilled in the art that the design of the expression vector can depend on such factors as the choice of the host cell to be transformed, the level of expression of protein desired, etc. The expression vectors can be introduced into host cells to thereby produce proteins or peptides, including fusion proteins or peptides, encoded by nucleic acids as described herein.

[000232]Another aspect provides host cells into which a recombinant expression vector has been introduced. A host cell can be any prokaryotic cell (for example, *E. coli*) or eukaryotic cell (for example, yeast, insect, or mammalian cells (*e.g.*, CHO cells)). Vector DNA can be introduced into prokaryotic or eukaryotic cells *via* conventional transformation or transfection techniques. For stable transfection of mammalian cells, it is known that, depending upon the expression vector and transfection technique used, only a small fraction of cells may integrate the foreign DNA into their genome. In order to identify and select these integrants, a gene that encodes a selectable marker (*e.g.*, for resistance to antibiotics) is generally introduced into the

host cells along with the gene of interest. Preferred selectable markers include those which confer resistance to drugs, such as G418, hygromycin and methotrexate. Cells stably transfected with the introduced nucleic acid can be identified by drug selection (*e.g.*, cells that have incorporated the selectable marker gene will survive, while the other cells die), among other methods.

J. Use of HB-EGF Antigen Binding Proteins for Diagnostic and Therapeutic Purposes

1. Indications

[000233]The HB-EGF antigen binding proteins as described herein can be used to detect or treat a number of diseases and disorders, including those involving excessive cellular proliferation, undesirable cellular migration and/or aberrant angiogenesis. For example, these HB-EGF antigen binding proteins can inhibit HB-EGF-induced EGFR and/or HER4 tyrosine phosphorylation in cancerous cells (FIGURES 22-29). Such inhibition can interrupt the cascade of the signaling events that drives cell proliferation and migration, and angiogenesis. Further, the HB-EGF antigen binding proteins can interfere with the transactivation of the EGFR. In addition, these antigen binding proteins inhibit basal HUVEC cell proliferation (FIGURE 32B), endothelial cell tube formation (FIGURE 33) and HB-EGF-induced vessel formation in a matrigel plug assay *in vivo* (FIGURE 36). These results indicate that the HB-EGF antigen binding proteins as described herein inhibit angiogenesis *in vitro* and *in vivo*. Moreover, these antigen binding proteins also inhibit anchorage independent cell growth (FIGURE 34 and FIGURE 35) and xenograft tumor growth in mice (FIGURE 37 and FIGURE 38). Significantly, the HB-EGF antigen binding proteins also inhibit migration of MCF-7 and MDA-MB231 cancer cells (*see*, FIGURES 27 and 27). Thus, the HB-EGF antigen binding proteins as described herein attack several steps in the development of tumors and other cancerous conditions, including signaling events that control cell proliferation, angiogenesis and cell migration associated with the spread and development of metastatic cancer. Such multi-faceted intervention is highly beneficial for controlling and inhibiting the process by which cancer develops. Furthermore, cancers at any stage of progression (*e.g.*, primary, metastatic and recurrent cancers) can be treated.

[000234]In addition to the HB-EGF antigen binding proteins' use in detecting and treating cancers in various stages of progression, these antigen binding proteins may also be useful for detecting a number of different types of cancer. For example, HB-EGF is expressed at very low levels in normal breast and pancreatic tissues. However, HB-EGF is expressed at high levels in about 55% pancreatic cancer cells and about 70% of breast cancer cells. Furthermore, as described in the Examples, HB-EGF expression was detected in various cancer cell lines,

indicating that the HB-EGF antigen binding proteins described herein can be used for detection of a variety of cancer types.

[000235]For example, cancers that can be detected or treated by the claimed antigen binding proteins include solid mammalian tumors as well as hematological malignancies. Solid mammalian tumors include cancers in children such as, for example, germ cell tumors, soft tissue sarcomas, primary brain tumors, neuroblastoma, nephroblastoma and carcinoma, in particular squamous carcinoma and epithelial carcinoma. Solid mammalian tumors may also include adult cancers such as, for example, tumors of unknown origin, primary brain cancer in adults, tumors of the pituitary gland, lip, oral cavity, Nasopharynx, larynx, maxillary sinus, Ethmoid sinus, salivary glands, thyroid gland (including para thyroid glands and carcinoid), esophagus, stomach, pancreas, small intestine, colon, rectum, anal canal, liver, gallbladder, extra hepatic bile ducts, ampulla of vater, carcinoid, endocrine tumors of gastro-entero-hepatic system, pheochromocytoma and paraganglioma, adrenal glands, lung, pleura, mediastinum, thymus, tumors of bone and soft tissue, skin tumors of lip, eyelid, external ear, other unspecified parts of the face, scalp and neck, trunk, upper limpb and shoulder, lower limb and hip, vulva, penis, scrotum, breast tumors, gynecological tumors of vulva, vagina, cervix uteri, corpus uteri, ovary, fallopian tube, gestational and trophoblastic tumors, penis, prostate, testis, kidney, renal pelvis and ureter, urinary bladder, urethra, ophthalmic tumors of eyelid, conjunctiva, uvea, retina, orbit and lacrimal gland. Hematological malignancies include childhood, for example, leukemia and lymphomas, acute and chronic leukemia (AML, ANLL, ALL, CML, MDS), Hodgkin's disease, B-Cell, T-Cell, large cell, follicular, indolent/low grade, aggressive/high grade lymphomas of lymphocytic and cutaneous origin, plasma cell neoplasm and cancers associated with AIDS.

[000236]In addition, the HB-EGF antigen binding proteins described herein may also be used to detect or treat cancerous conditions or neoplasia disorders, which include, for example, adenoma, tubulovillous adenoma, villous adenoma, angiofibroma, atypical proliferating mucinous neoplasias, Brenner tumor, carcinoid, cavernous hemangioma, cellular leiomyoma, chorangioma, congenital mesoblastic nephroma, mucinous cystadenoma, serous cystadenoma, dermoid, desmoid, fibroadenoma, fibroma, fibrothecoma, follicular adenoma, ganglioneuroma, giant cell tumor, granular cell tumor, granulosa cell tumor, hemangioma, intraductal papilloma, islet cell tumor, leiomyoma, lipoma, luteoma, meningioma, mole, myelolipoma, myxoma, neurofibroma, nevus, osteochondroma, pheochromocytoma, polyposis, schwannoma, serous cystadenoma, struma ovarii, synovial chrondromatosis, benign thymoma.

[000237]Further examples of the types of cancers that can be detected or treated with the HB-EGF proteins as described herein may be found, for example, from the American Cancer Society (www.cancer.org), or from Wilson *et al.* (1991) Harrison's Principles of Internal Medicine, 12th Edition, McGraw-Hill, Inc.

[000238]Therefore, the HB-EGF antigen binding proteins as described herein can be used to treat and/or prevent cancer, cancerous conditions, tumor growth, metastasis of cancer cells, angiogenic processes and/or neoplastic disorders. Thus, these antigen binding proteins provide a method of treating or preventing cancer in a subject that involves administering to the subject an effective amount of a composition comprising one of the human and/or monoclonal HB-EGF antigen binding protein preparations as described herein, or a combination thereof.

[000239]A high proportion of solid tumor diseases are often characterized by tumor angiogenesis, the excessive growth of (abnormal) vessels in the tumor tissue mediated by growth factors (*i.e.*, VEGF) and other factors (*i.e.*, HB-EGF). Targeting HB-EGF through a HB-EGF-specific antigen binding protein could prevent the formation of new vessels and therefore limit the expansion of existing tumors and the development of new tumors (*i.e.*, metastases).

[000240]Besides its role as a mitogenic and pro-invasive ligand several studies have substantiated the picture of HB-EGF as an important regulator of angiogenic processes in cancer. As illustrated in the Examples, a function of HB-EGF in the regulation of angiogenesis *in vivo* was shown. Thus, the antigen binding proteins as described herein can be used for treating diseases associated with or caused by angiogenesis, *e.g.*, cancerous or non-cancerous diseases.

[000241]For example HB-EGF antigen binding proteins as described herein may interfere with the communication between smooth muscle cells (SMCs) and endothelial cells, a fundamental process in the development and functionality of blood vessels in angiogenesis, *e.g.*, tumor angiogenesis.

[000242]Furthermore, these antigen binding proteins may at least partially inhibit the HB-EGF induced expression and release of VEGF from SMCs which acts subsequently as a powerful endothelial mitogen. Similarly, VEGF increases HB-EGF production in endothelial cells which therefore constitutes a pro-angiogenic feedback loop consisting of these two important ligands that can be disrupted by administering the HB-EGF antigen binding proteins as described herein. Recently, and in addition to VEGF, further critical pro-angiogenic constituents such as angiopoetin 1 and 2 (Ang-1 & 2) and their receptor TIE-2 as well as the potent smooth muscle cell GPCR stimulus angiotensin II (ATII) were identified. Interestingly, HB-EGF is a critical mediator of ATII-induced EGFR transactivation and downstream upregulation of VEGF and Ang-2 in endothelial cells. *In vivo*, ATII induces angiogenesis in an HB-EGF-dependent manner and enhanced the angiogenic activity of VEGF. These findings support that in parallel to VEGF, HB-EGF is able to activate additional angiogenic pathways *via* Ang2. Therefore, aberrant angiogenesis or cancer in a mammal may be treated with the administration of an effective amount of the HB-EGF antigen binding protein described herein.

[000243]Besides its role as an important regulator of angiogenic processes in cancer, various non-cancer indications with activated angiogenic pathways and the requirement of collateral blood flow are putative disease areas for HB-EGF antigen binding protein therapy.

[000244]Chronic inflammatory diseases (*e.g.*,nephritis, COPD, inflammatory bowel disease) including immune system mediated "inflammatory reactions" (*e.g.*,graft versus host disease, transplant rejection, restenosis), metabolic diseases (*e.g.*,diabetes), or chronic hypoxic conditions are often characterized by hyper- and/or neo-vascularization (*e.g.*,chronic ulcers). The described HB-EGF antigen binding proteins may at least partially inhibit the essential process for angiogenesis - the recruitment of vascular smooth muscle cells by endothelial cells induced by HB-EGF either produced by inflammatory cells or upregulated by hypoxia - and represent therefore an attractive route for interventional therapy of excessive/pathological vascularization.

[000245]In obese subjects, increased levels of HB-EGF derived from the accumulated fat which contribute to the higher incidence of vascular disease in obesity, can be neutralized by the HB-EGF antigen binding proteins described herein. A therapeutic intervention with an HB-EGF antigen binding protein may act therefore directly as an anti-adipocytokine in interrupting the adipovascular axis.

[000246]In fibroblasts, HB-EGF significantly downregulates elastin mRNA *via* activation of epidermal growth factor receptor. This effect provides an avenue of intervention in the development of lung fibrosis.

[000247]Moreover HB-EGF is a mitogen of keratinocytes involved in the pathogenesis of inflammatory diseases. In addition, expression of HB-EGF and co-localization with the EGFR may play an important role in the early pathogenesis of psoriasis which opens a potential therapeutic window in the treatment of cutaneous inflammatory diseases and specifically in the early treatment of psoriasis with the claimed antigen binding proteins.

[000248]Targeting HB-EGF with the described antigen binding proteins may also result in a treatment option for patients with proliferative vitreoretinopathy (PVR), since the development of PVR is accompanied by a significant upregulation of HB-EGF in PVR retinas. In addition HB-EGF expression in fibroproliferative tissue and its stimulatory effect on glial cell proliferation, chemotaxis, and VEGF secretion suggest that HB-EGF may be a factor mediating glial cell responses during PVR. These principles can also be applied to further angiogenesis-dependent eye diseases such as age-related and non age-related macular degeneration, diabetic retinopathy, rubeotic glaucoma, interstitial keratitis, retinopathy of prematurity and corneal graft failure.

[000249]GPCRs such as adrenoceptors and angiotensin receptors have been linked to the pathogenesis of hypertension due to their vasoconstrictive and growth promoting abilities. Since

HB-EGF is a critical mediator of these pathways, neutralizing antigen binding proteins are suitable for targeted intervention in hypertensive disorders such as cardiac hypertrophy and congestive heart failure, kidney failure or stroke.

[000250]HB-EGF, a potent mitogen and chemoattractant for smooth muscle cells (SMCs), was detected in atherosclerotic plaques of coronary arteries with intimal thickening and produced by SMCs and macrophages. Remnant lipoproteins which are known causative agents of atherosclerosis were furthermore shown to induce SMC proliferation *via* HB-EGF mediated EGFR transactivation. Therefore, the HB-EGF antigen binding proteins as described herein represent selective and efficient agents targeting atherosclerosis by blocking critical smooth muscle cell functions. In addition restenosis after percutaneous coronary intervention which is characterized by proliferation of smooth muscle cells might also be prevented by specific neutralization of HB-EGF function.

[000251]Thus, the HB-EGF antigen binding proteins as described herein can be used to treat a variety of diseases, including non-malignant proliferative diseases such as aberrant angiogenesis, leiomyoma (uterine fibrosis), benign smooth muscle cell tumors, glomerulosclerosis (hyperproliferation of mesangial cells), smooth muscle cell hyperplasia, atherosclerosis (hyperproliferation of vascular smooth muscle cells), rubeosis; neovascular glaucoma, diabetic retinopathy, diabetic blindness, macular degeneration, rheumatoid arthritis, cardiac hypertrophy, psoriasis, and the like.

[000252]In a further aspect, these HB-EGF antigen binding proteins can be used to treat disorders associated with or accompanied by a disturbed, *e.g.*,pathologically enhanced growth factor receptor activation.

[000253]In another aspect, this enhanced growth factor receptor activation may be associated with or caused by a pathological increase in the activity of a G protein and/or a G protein coupled receptor. It should be noted that disorders that are associated with or accompanied by a disturbed, *e.g.*,pathologically enhanced growth factor receptor activation and which are may be associated with or caused by a pathological increase in the activity of a G protein and/or a G protein coupled receptor, can be delimited from other disorders characterized by an enhanced activity of growth factor receptor activation in that a transactivation of the growth factor receptor *via* G protein coupled receptor takes place.

2. Diagnostic Methods

[000254]The HB-EGF antigen binding molecules as described herein may be used in a method for detecting cancer cells in a test sample that includes contacting the test sample with the antigen binding molecule and detecting whether the antibody binds to a cell expressing proHB-EGF or HB-EGF molecules in the sample. The degree to which binding occurs can be assessed

by use of a control sample. The test and control samples can, for example, be blood, serum, ascites, pleural effusion, cerebro-spinal fluid, tissue, cell, urine, lymph, saliva, milk or other samples. Such a control sample can be a non-cancerous sample of the fluid or tissue or cell type. In some embodiments, the control sample is a non-cancerous sample obtained from the same subject as the test sample. "Subject" or "patient" refers to a mammal, preferably a human, in need of treatment for or detection of a condition, disorder or disease.

[000255]The binding of antibody to components of the test sample can be detected by detecting a reporting molecule, imaging agent or label that is bound or can be selectively bound to a antigen binding protein as described herein. These HB-EGF antigen binding proteins can have one or more reporter molecules, labels or imaging agents. A reporter molecule is defined as any moiety that may be detected using an assay. Non-limiting examples of reporter molecules that have been conjugated to antibodies include enzymes, radiolabels, haptens, fluorescent labels, phosphorescent molecules, chemiluminescent molecules, chromophores, luminescent molecules, photoaffinity molecules, colored particles or ligands, such as biotin. The reporting molecule can provide a detectable signal. For example, the detectable signal can be a fluorescent, phosphorescent, chemiluminescent, electrochemiluminescent, electrochemical, color change or enzymatic signal. Anti-HB-EGF antibodies provided herein can be used as capturing antibodies for ELISA-based detection of the growth factor or immunohistochemical analysis of tissue samples as shown in FIGURE 39.

[000256]In some embodiments, the reporting molecule is covalently bound to a antigen binding protein as described herein. In other embodiments, the reporting molecule can be selectively bound to the HB-EGF antigen binding protein as described herein. Such selective binding of a reporting molecule to the described antigen binding protein can be accomplished by a secondary antibody with the label covalently bound thereto, where the secondary antibody selectively binds to an HB-EGB antigen binding protein as described herein.

3. Methods Of Treatment: Pharmaceutical Formulations, Routes Of Administration

[000257]Treatment of, or treating, cancer is intended to include the alleviation of or diminishment of at least one symptom typically associated with the disease. The treatment also includes alleviation or diminishment of more than one of the associated symptoms. The treatment may cure the cancer, *e.g.*, it may substantially eliminate the cancer cells and/or arrest the growth of the cancerous tumor. Alternatively, treatment may slow the progression of the cancer.

[000258]Anti-cancer activity can be evaluated against varieties of cancers or cancer cells using methods available to one of skill in the art. Anti-cancer activity, for example, can be determined by identifying the LD_{100} or ED_{50} of a preparation of the antigen binding proteins described herein

that prevents the growth of a cancer. In one embodiment, anti-cancer activity is the amount of antibody that kills 50% or 100% of the cancer cells when measured using standard dose response methods.

[000259] The HB-EGF antigen binding proteins as described herein can be administered alone, or in combination with antibodies, chemotherapeutic drugs or radiation therapy. Pharmaceutical compositions according to the invention may be administered as monotherapy or in combination with another pharmaceutical composition, preferably comprising another anti-neoplastic agent, in particular Cisplantin or Avastin. For example, the described HB-EGF antigen binding proteins can be co-administered with anti-tumor antibodies, (*e.g.*,chimeric, humanized or human anti-tumor antibodies), with antibodies that specifically bind to VEGF to further inhibit tumor angiogenesis, or with antibodies that specifically bind to a receptor tyrosine kinase such as HER2, HER4 or EGFR and therefore further inhibit tumor cell proliferation. In FIGURE 38, the synergistic effect of an anti-EGFR antibody and antiHB-EGF antibodies could be shown for both therapeutic antiHB-EGF antibodies tested. Further, the HB-EGF antigen binding proteins described herein may be co-administered with other anti-tumor agents. Specific examples of anti-tumor agents which can be co-administered with the antibodies provided herein include, for example, gefitinib, lapatinib, sunitinib, pemetrexed, bevacisumab, cetuximab, imatinib, trastuzumab, alemtuzumab, rituximab, erlotinib, bortezomib and the like. Any other anti-cancer agent or drug that can inhibit cancer or tumor cell proliferation can also be used in the compositions as described and claimed herein. For example, the claimed compositions can include chemotherapeutic agents such as capecitabine, daunorubicin, daunomycin, dactinomycin, doxorubicin, epirubicin, idarubicin, esorubicin, bleomycin, mafosfamide, ifosfamide, cytosine arabinoside, bis-chloroethylnitrosurea, busulfan, mitomycin C, actinomycin D, mithramycin, prednisone, hydroxyprogesterone, testosterone, tamoxifen, dacarbazine, procarbazine, hexamethylmelamine, pentamethylmelamine, mitoxantrone, amsacrine, chlorambucil, methylcyclohexylnitrosurea, nitrogen mustards, melphalan, cyclophosphamide, 6-mercaptopurine, 6-thioguanine, cytarabine (CA), 5-azacytidine, hydroxyurea, deoxycoformycin, 4-hydroxyperoxycyclophosphor-amide, 5-fluorouracil (5-FU), 5-fluorodeoxyuridine (5-FUdR), methotrexate (MTX), colchicine, taxol, vincristine, vinblastine, etoposide, trimetrexate, teniposide, cisplatin, avastin and diethylstilbestrol (DES). *See*, generally, The Merck Manual of Diagnosis and Therapy, 15th Ed. 1987, pp. 1206-1228, Berkow *et al.*, eds., Rahway, N.J. When used with the described HB-EGF antigen binding proteins, such chemotherapeutic agents may be used individually (*e.g.*, 5-FU and an antibody), sequentially (*e.g.*, 5-FU and an antibody for a period of time followed by MTX and an antibody), or in combination with one or more other such chemotherapeutic agents (*e.g.*, 5-FU, MTX and an antibody, or 5-FU, radiotherapy and an antibody).

[000260]Also provided is a method of evaluating a therapeutically effective dosage for treating a cancer with an antibody having an amino acid sequence disclosed herein, that includes determining the LD_{100} or ED_{50} of the HB-EGF antigen binding protein preparation *in vivo* or *in vitro*. Such a method permits calculation of the approximate amount of antigen binding protein needed per volume to inhibit cancer cell growth or metastasis by about 10% to 100%, or about 20% to 100%, or about 25% to 100%, or about 30% to 100%, or about 40% to 100%, or about 50% to 100%. In some embodiments, less than 100% inhibition of cancer cell growth or metastasis is observed. For example, cancer cell growth and/or metastasis is inhibited by about 90%, 80%, 70%, 60%, or 50%. Percentage inhibition can be determined, for example, by administration of the antigen binding protein preparation to SCID or nu/nu mice available in the art wherein tumor cells have been introduced and/or by standard methods using cultured cancer cells (*see*, FIGURE 38B). Several methods are described in the Examples.

[000261]Also included are sterile pharmaceutical formulations of the HB-EGF antigen binding proteins as described herein that are useful as treatments for diseases including, for example, cancer and/or aberrant angiogenesis. Such formulations would inhibit the binding of HB-EGF to its receptor, *e.g.*,EGFR or to HER4, thereby effectively treating pathological conditions where, for example, serum, cellular or tissue HB-EGF is abnormally elevated or where its receptors, *e.g.*,EGFR or HER4, are abnormally active. As illustrated herein the HB-EGF antigen binding proteins possess adequate affinity to potently neutralize HB-EGF and to modulate the signaling events associated with the HB-EGF receptors.

[000262]The HB-EGF antigen binding proteins as described herein are preferably humanized antigen binding proteins. Administration of these humanized antigen binding proteins reduce the probability of a negative side effect. Moreover, these antigen binding proteins are stable *in vivo*, for example, because they are recognized as normal human products, thereby minimizing the risk of immune system responses. Moreover, these antigen binding proteins are not prone to proteolytic destruction, improving their circulating half-lives. Hence, the HB-EGF preparations as described herein have an excellent half-life *in vivo* so that administration in humans is comparatively infrequent. Such a prolonged duration of action may allow for less frequent and more convenient dosing schedules by alternate parenteral routes such as subcutaneous or intramuscular injection.

[000263]Sterile formulations can be created, for example, by filtration through sterile filtration membranes, prior to or following lyophilization and reconstitution of the antibody. The antigen binding proteins as described herein are ordinarily stored in lyophilized form or in solution. Therapeutic antibody compositions generally are placed into a container having a sterile access port, for example, an intravenous solution bag or vial having an adapter that allows retrieval of the formulation, such as a stopper pierceable by a hypodermic injection needle.

[000264]The route of administration of the HB-EGF antigen binding proteins are in accord with known methods, *e.g.*, injection or infusion by intravenous, subcutaneous, intradermal, intraperitoneal, intracerebral, intramuscular, intraocular, intraarterial, intrathecal, intravesical, intra-cavernous, inhalation, intralesional routes, or by sustained release systems as noted below. In some embodiments, the antigen binding proteins as described herein are administered continuously by infusion or by bolus injection.

[000265]The HB-EGF antigen binding proteins, as described herein, can be prepared in a mixture with a pharmaceutically acceptable carrier. This therapeutic composition can be administered intravenously or through the nose or lung, preferably as a liquid or powder aerosol (lyophilized). The composition may also be administered parenterally or subcutaneously as desired. When administered systemically, the therapeutic composition should be sterile, pyrogen-free and in a parenterally acceptable solution with consideration for what are physiologically acceptable pH values, isotonicity, and stability. These conditions are known to those skilled in the art. Briefly, dosage formulations of the compounds described herein are prepared for storage or administration by mixing the compound having the desired degree of purity with physiologically acceptable carriers, excipients, or stabilizers. Such materials are non-toxic to the recipients at the dosages and concentrations employed, and include buffers such as TRIS HCl, phosphate, citrate, acetate and other organic acid salts; antioxidants such as ascorbic acid; low molecular weight (less than about ten residues) peptides such as polyarginine, proteins, such as serum albumin, gelatin, or immunoglobulins; hydrophilic polymers such as polyvinylpyrrolidinone; amino acids such as glycine, glutamic acid, aspartic acid, or arginine; monosaccharides, disaccharides, and other carbohydrates including cellulose or its derivatives, glucose, mannose, or dextrins; chelating agents such as EDTA; sugar alcohols such as mannitol or sorbitol; counterions such as sodium and/or nonionic surfactants such as TWEEN, PLURONICS or polyethyleneglycol.

[000266]Sterile compositions for injection can be formulated according to conventional pharmaceutical practice as described in *Remington: The Science and Practice of Pharmacy* (20th ed, Lippincott Williams & Wilkens Publishers (2003)). For example, dissolution or suspension of the active compound in a vehicle such as water or naturally occurring vegetable oil like sesame, peanut, or cottonseed oil or a synthetic fatty vehicle like ethyl oleate or the like may be desired. Buffers, preservatives, antioxidants and the like can be incorporated according to accepted pharmaceutical practice.

[000267]Suitable examples of sustained-release preparations include semipermeable matrices of solid hydrophobic polymers containing the polypeptide, which matrices are in the form of shaped articles, films or microcapsules. Examples of sustained-release matrices include polyesters, hydrogels (*e.g.*, poly(2-hydroxyethyl-methacrylate) as described by Langer *et al.*,

1981, *J. Biomed Mater. Res.* 15:167-277 and Langer, 1982, *Chem. Tech.* 12:98-105, or poly(vinylalcohol)), polylactides (U.S. Pat. No. 3,773,919, EP 58,481), copolymers of L-glutamic acid and gamma ethyl-L-glutamate (Sidman *et al.*, 1983, *Biopolymers* 22:547-556), non-degradable ethylene-vinyl acetate (Langer *et al.*, *supra*), degradable lactic acid-glycolic acid copolymers such as the LUPRON Depot™ (injectable microspheres composed of lactic acid-glycolic acid copolymer and leuprolide acetate), and poly-D-(-)-3-hydroxybutyric acid (EP 133,988).

[000268]While polymers such as ethylene-vinyl acetate and lactic acid-glycolic acid enable release of molecules for over 100 days, certain hydrogels release proteins for shorter time periods. When encapsulated proteins remain in the body for a long time, they may denature or aggregate as a result of exposure to moisture at 37°C, resulting in a loss of biological activity and possible changes in immunogenicity. Rational strategies can be devised for protein stabilization depending on the mechanism involved. For example, if the aggregation mechanism is discovered to be intermolecular S-S bond formation through disulfide interchange, stabilization may be achieved by modifying sulfhydryl residues, lyophilizing from acidic solutions, controlling moisture content, using appropriate additives, and developing specific polymer matrix compositions.

[000269]Sustained-released compositions also include preparations of crystals of the antigen binding protein suspended in suitable formulations capable of maintaining crystals in suspension. These preparations when injected subcutaneously or intraperitoneally can produce a sustained release effect. Other compositions also include liposomally entrapped antibodies. Liposomes containing such antibodies are prepared by methods known per se: U.S. Pat. No. DE 3,218,121; Epstein *et al.*, 1985, *Proc. Natl. Acad. Sci. USA* 82:3688-3692; Hwang *et al.*, 1980, *Proc. Natl. Acad. Sci. USA* 77:4030-4034; EP 52,322; EP 36,676; EP 88,046; EP 143,949; 142,641; Japanese patent application 83-118008; U.S. Pat. Nos. 4,485,045 and 4,544,545; and EP 102,324.

[000270]The dosage of the antigen binding protein formulation for a given patient will be determined by the attending physician taking into consideration various factors known to modify the action of drugs including severity and type of disease, body weight, sex, diet, time and route of administration, other medications and other relevant clinical factors. Therapeutically effective dosages may be determined by either *in vitro* or *in vivo* methods.

[000271]An effective amount of the antigen binding proteins, described herein, to be employed therapeutically will depend, for example, upon the therapeutic objectives, the route of administration, and the condition of the patient. Accordingly, it is preferred for the therapist to titer the dosage and modify the route of administration as required to obtain the optimal therapeutic effect. A typical daily dosage might range from about 0.001 mg/kg to up to 100

mg/kg or more, depending on the factors mentioned above. Typically, the clinician will administer the therapeutic antigen binding protein until a dosage is reached that achieves the desired effect. The progress of this therapy is easily monitored by conventional assays or as described herein.

[000272]It will be appreciated that administration of therapeutic entities in accordance with the compositions and methods herein will be administered with suitable carriers, excipients, and other agents that are incorporated into formulations to provide improved transfer, delivery, tolerance, and the like. These formulations include, for example, powders, pastes, ointments, jellies, waxes, oils, lipids, lipid (cationic or anionic) containing vesicles (such as Lipofectin™), DNA conjugates, anhydrous absorption pastes, oil-in-water and water-in-oil emulsions, emulsions carbowax (polyethylene glycols of various molecular weights), semi-solid gels, and semi-solid mixtures containing carbowax. Any of the foregoing mixtures may be appropriate in treatments and therapies involving the HB-EGF antigen binding protein as described herein, provided that the active ingredient in the formulation is not inactivated by the formulation and the formulation is physiologically compatible and tolerable with the route of administration. *See*, also Baldrick P. "Pharmaceutical excipient development: the need for preclinical guidance," 2000, *Regul. Toxicol. Pharmacol.* 32:210-218; Wang, "Lyophilization and development of solid protein pharmaceuticals," 2000, *Int. J. Pharm.* 203:1-60; Charman WN "Lipids, lipophilic drugs, and oral drug delivery-some emerging concepts," *J. Pharm. Sci* .89:967-978; Powell *et al.*, 1998, "Compendium of excipients for parenteral formulations," *PDA J. Pharm. Sci. Technol.* 52:238-311 and the citations therein for additional information related to formulations, excipients and carriers well known to pharmaceutical chemists.

[000273]The following examples, including the experiments conducted and results achieved are provided for illustrative purposes only and are not to be construed as limiting upon the teachings herein.

EXAMPLES

K. Example 1: Generation Of Immunogen

[000274]HB-EGF including EGF-like domain (aa 1-149) was amplified from a pcDNA3-VSV-HB-EGF expression construct (Prenzel *et al.*, 1999, *supra*) and cloned into an expression vector that provides an in-frame 6His tag at the carboxyl-terminus (pcDNA 3.1 myc-his, InVitrogen). This HB-EGF immunogen with C-terminal myc(HIS)6 tag was expressed in HEK293 cells and purified by a two step purification on Ni-NTA sepharose (Amersham Pharmacia) and heparin sepharose (Sigma).

[000275]The HB-EGF portion of the immunogen had the following sequence (SEQ ID NO:1077).

1 MKLLPSVVLK LFLAAVLSAL VTGESLERLR RGLAAGTSNP

41 DPPTVSTDQL LPLGGGRDRK VRDLQEADLD LLRVTLSSKP
81 QALATPNKEE HGKRKKKGKG LGKKRDPCLR KYKDFCIHGE
121 CKYVKELRAP SCICHPGYHG ERCHGLSLP

B. Example 2: Immunization Of Xenomouse Mice And Titers Observed

[000276]Monoclonal antibodies against HB-EGF were developed by sequentially immunizing XenoMouse® mice (XenoMouse strains: XMG2 (human IgG2-producing) and XM3C-1 (human IgG4-producing), Abgenix, Inc. Fremont, CA).

1. Immunization

[000277]XenoMouse animals were immunized *via* the footpad for all injections. The total volume of each injection was 50 µl per mouse, 25 µl per footpad.

[000278]For both cohort 1 (10 XMG2 mice) and Cohort 2 (10 XM3C-1), the initial immunization was with 10 µg of HB-EGF protein admixed 1:1 (v/v) with TITERMAX GOLD® (Sigma, Oakville, ON) per mouse. The subsequent four boosts were made with 10 µg of HB-EGF protein admixed 1:1 (v/v) with 100 µg alum gel (Sigma, Oakville, ON) in pyrogen-free D-PBS. The fifth boost consisted of 10 µg of HB-EGF protein admixed 1:1 (v/v) with TITERMAX GOLD®. The sixth and seventh injection consisted of 10 µg of HB-EGF protein admixed 1:1 v/v with 100 µg alum gel. A final boost was made with 10 µg of HB-EGF protein in pyrogen-free DPBS, without adjuvant. The XenoMouse mice were immunized on days 0, 4, 8, 14, 18, 21, 25, and 28 for this protocol and fusions were performed on day 32. The two bleeds were made through Retro-Orbital Bleed procedure on day 16 after the fourth boost, on day 23 after the sixth boost.

2. Selection Of Animals For Harvest By Titer

[000279]Anti-HB-EGF antibody titers in the serum from immunized XenoMouse mice were determined by ELISA. Briefly, the HB-EGF protein (2 µg/ml) was coated onto Costar Labcoat Universal Binding Polystyrene 96-well plates (Corning, Acton, MA) overnight at 4°C in Antigen Coating Buffer (0.1 M Carbonate Buffer, pH 9.6 $NaHCO_3$ (MW 84) 8.4 g/L). The next day, the plates were washed one time with washing buffer (0.05% Tween 20 in 1x PBS) using a Biotek plate washer. The plates were then blocked with 200 µl/well blocking buffer (0.5% BSA, 0.1% Tween 20, 0.01% Thimerosal in 1x PBS) and incubated at room temperature for 1 hour. After the one-hour blocking, the plates were washed one time with washing buffer using a Biotek plate washer. Sera from either the HB-EGF protein immunized XenoMouse mice or naïve XenoMouse animals were titrated in 0.5% BSA/PBS buffer at 1:3 dilutions in duplicate from a 1:100 initial dilution. The last well was left blank. These plates were incubated at room temperature for 2 hours, and the plates were then washed three times with washing buffer using

a Biotek plate washer. A goat anti-human IgG Fc-specific horseradish peroxidase (CALTAG, Cat NO, H10507) conjugated antibody was added at a final concentration of 1:2000 in blocking buffer and incubated for 1 hour at room temperature. The plates were washed three times with washing buffer using a Biotek plate washer. After washing, the plates were developed with the addition of TMB chromogenic substrate (BioFx BSTP-0100-01) for 10-20 minutes or until negative control wells start to show color. Then the ELISA was stopped by the addition of Stop Solution (650 nM Stop reagent for TMB (BioFx BSTP-0100-01), reconstituted with 100 ml H_2O per bottle). The specific titer of each XenoMouse animal was determined from the optical density at 650 nm and is shown in TABLE 1 below. The titer value is the reciprocal of the greatest dilution of sera with an OD reading two-fold that of background. Therefore, the higher the number, the greater was the humoral immune response to HB-EGF.

[000280]

[000281]TABLE 1

[000282]

Group 1, fp, XMG2,10 mice,		
	After 4 inj.	After 6 inj.
Mouse ID	Reactivity to HB-EGF	
P4721	3,800	59,000
P4722	6,500	68,000
P4723	2,500	43,000
P4724	2,400	22,000
P4725	2,400	71,000
P4726	450	58,000
P4727	1,600	20,000
P4728	2,700	61,000
P4729	800	61,000
P47210	5,700	78,000
NC	<100	<100
PC	<100	<100

Group 2, fp, XM3C-1,10 mice,		
	After 4 inj.	After 6 inj.
Mouse ID	Reactivity to HB-EGF	
P2664	35	2,300
P2666	20	750
P2669	30	850
P26610	75	1,900
P2892	60	550
P2894	60	1,400
P2895	95	2,600
P2896	45	2,500
P3672	50	2,000
P3678	60	1,800
NC	<100	<100
PC	35	20

C. Example 3: Hybridoma Generation And Primary Screen For Binders

[000283]Immunized mice were sacrificed and the lymph nodes were harvested and pooled from each cohort. The lymphoid cells were dissociated 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. Using 100 µl of CD90+ magnetic beads per 100 million cells, the cells were labeled by incubating the cells with the magnetic beads at 4°C for 15 minutes. The magnetically-labeled cell suspension containing up to 10^8 positive cells (or up to $2x10^9$ total cells) was loaded onto a LS+ column and the column washed with DMEM. The total effluent was collected as the CD90-negative fraction (most of these cells were expected to be B cells).

[000284]The fusion was performed by mixing washed enriched B cells from above and nonsecretory myeloma P3X63Ag8.653 cells purchased from ATCC, cat.# CRL 1580 (Kearney *et al*, 1979, *J. Immunol.* 123:1548-1550) at a ratio of 1:1. The cell mixture was gently centrifuged at 800 g. After complete removal of the supernatant, the cellular pellet was treated with 2-4 ml of Pronase solution (CalBiochem, cat. # 53702; 0.5 mg/ml in PBS) for no more than 2 minutes. Then, 3-5 ml of FBS was added to stop the enzyme activity and the suspension was adjusted to

40 ml total volume using electro cell fusion solution, ECFS (0.3 M Sucrose, Sigma, Cat# S7903, 0.1 mM Magnesium Acetate, Sigma, Cat# M2545, 0.1 mM Calcium Acetate, Sigma, Cat# C4705). The supernatant was removed after centrifugation and the cells were resuspended in 40 ml ECFS. This wash step was repeated and the cells again were resuspended in ECFS to a concentration of $2x10^6$ cells/ml.

[000285]Electro-cell fusion was performed using a fusion generator, model ECM2001, Genetronic, Inc., San Diego, CA. The fusion chamber size used was 2.0 ml, using the following instrument settings: Alignment condition: voltage: 50 V, time: 50 seconds; membrane breaking at: voltage: 3000 V, time: 30 µsec; post-fusion holding time: 3 seconds.

[000286]After electro-cell fusion, the cell suspensions were carefully removed from the fusion chamber under sterile conditions and transferred into a sterile tube containing the same volume of Hybridoma Culture Medium (DMEM (JRH Biosciences), 15% FBS (Hyclone), supplemented with L-glutamine, pen/strep, OPI (oxaloacetate, pyruvate, bovine insulin) (all from Sigma) and IL-6 (Boehringer Mannheim)). The cells were incubated for 15-30 minutes at 37°C, and then centrifuged at 400 g for five minutes. The cells were gently resuspended in a small volume of Hybridoma Selection Medium (Hybridoma Culture Medium supplemented with 0.5x HA (Sigma, cat. # A9666)), and the volume was adjusted appropriately with more Hybridoma Selection Medium, based on a final plating of $5x10^6$ B cells total per 96-well plate and 200 µL per well. The cells were mixed gently and pipetted into 96-well plates and allowed to grow. On day 7 or 10, one-half the medium was removed, and the cells were re-fed with Hybridoma Selection Medium.

[000287]After 14 days of culture, hybridoma supernatants from the cohort #1 and cohort #2 were screened for HB-EGF-specific monoclonal antibodies by ELISA. In the Primary screen, the ELISA plates (Fisher, Cat. No. 12-565-136) were coated with 50 µL/well of HB-EGF protein (2 µg/ml) in Coating Buffer (0.1 M Carbonate Buffer, pH 9.6, $NaHCO_3$ 8.4 g/L), then incubated at 4°C overnight. After incubation, the plates were washed with Washing Buffer (0.05% Tween 20 in PBS) one time. 200 µL/well Blocking Buffer (0.5% BSA, 0.1% Tween 20, 0.01% Thimerosal in 1x PBS) were added and the plates were incubated at room temperature for 1 hour. After incubation, the plates were washed with Washing Buffer one time. Aliquots (50 µL/well) of hybridoma supernatants and positive and negative controls were added, and the plates were incubated at room temperature for 2 h. The positive control used throughout was serum from the relevant HB-EGF protein-immunized XenoMouse mouse and the negative control was serum from a KLH-immunized relevant strain of XenoMouse mouse. After incubation, the plates were washed three times with Washing Buffer. 100 µL/well of detection antibody goat anti-huIgGFc-HRP (Caltag Inc., Cat. No. H10507, using concentration was 1:2000 dilution) was added and the plates were incubated at room temperature for 1 hour. After incubation, the plates were

washed three times with Washing Buffer and 100 µl/well of TMB (BioFX Lab. Cat. No. TMSK-0100-01) was added. Plates were then allowed to develop for about 10 minutes (until negative control wells barely started to show color). 50 µl/well stop solution (TMB Stop Solution (BioFX Lab. Cat. No. STPR-0100-01) was then added and the plates were read on an ELISA plate reader at a wavelength of 450 nm.

[000288]The old culture supernatants from the positive hybridoma cells growth wells based on primary screen were removed and the HB-EGF positive hybridoma cells were suspended with fresh hybridoma culture medium and were transferred to 24-well plates. After 2 days in culture, these supernatants were ready for a secondary confirmation screen. In the secondary confirmation screen, the positives in the first screening were screened by ELISA (described as above) with two sets of detective antibodies: goat anti-huIgGFc-HRP (Caltag Inc., Cat. No. H10507, using concentration was 1:2000 dilution) for human gamma chain detection and goat anti-hIg kappa-HRP (Southern Biotechnology, Cat. No. 2060-05) for human kappa light chain detection in order to demonstrate that the antibody preparation was HB-EGF-specific and fully human in its composition. The two sets of ELISA procedures were identical to the descriptions above except the two different detection antibodies were used separately.

[000289]In parallel with the secondary confirmation screen, the counter ELISA screen was performed to exclude those antibodies that respond to myc(his)6 tag. The ELISA procedures were identical to the descriptions above except the coated with irrelevant myc(his)6 tag protein (ML-myc(his)6 protein) instead of coating with HB-EGF myc(his)6 protein.

[000290]After the secondary confirmation and the counter ELISA screen, 49 fully human IgG/kappa HB-EGF specific monoclonal antibodies were identified from cohorts 1 and 2.

D. Example 4: Scale-Up And Testing Of Antibodies In Functional Assays

[000291]This Example describes the identification of hybridoma cell lines that produce anti-HB-EGF antibodies with affinity for HB-EGF.

1. FACS Detection Of Hybridoma-Produced Anti-HB-EGF Antibodies Bound To HB-EGF Expressing Cell-Lines

[000292]HB-EGF expression on cell-lines was determined by FACS analysis. To perform this analysis $2x10^5$ selected HB-EGF-expressing cells were harvested with 10 mM EDTA in PBS, resuspended in FACS-buffer (PBS, 3% FCS, 0.4% azide) and seeded on a 96-well round bottom plate. After centrifugation for 3 minutes at 1000 rpm to remove supernatant, the cells were resuspended in hybridoma-derived anti-HB-EGF antibody dilution (100 µl/well) and incubated at 4°C for 45 min. The cells were washed twice with FACS buffer and resuspended with secondary antibody (100 µl/well) donkey-anti-human-PE (Jackson) diluted 1:100 in FACS buffer. The cell

suspensions were incubated at 4 °C in the dark for 30 min, washed twice with FACS buffer and analyzed (FACS, Beckman Coulter).

[000293]The results of these assays are provided in TABLES 2 and 3 below, which provide the fluorescence mean values for each FACS assay. As illustrated in TABLES 3 and 4, substantially no HB-EGF expression was detected in CHO control cells that do not express HB-EGF. However, when HB-EGF is recombinantly overexpressed in CHO cells, several monoclonal antibody preparations exhibit significant binding to those HB-EGF-expressing cells. Binding to MDA-MB231, SCC-9 and COS-7 cells was somewhat variable but an antibody preparation that bound to one HB-EGF-expressing cell type typically bound to another. As shown in TABLE 2, several antibody preparations, including, for example, the U2-24, U2-5, U2-19, U2-21, U2-15 and U2-42 antibody preparations exhibited strong binding to HB-EGF-expressing CHO cells. Similarly, antibody preparations U2-39, U2-26, U2-44, U2-45 and U2-48 also exhibited good binding to HB-EGF-expressing CHO cells.

[000294]

[000295]

TABLE 2
FACS Analysis Of Anti-HB-EGF Antibody Supernatants (Cohort 1)

	CHO control cells vs. HB-EGF-expressing CHO cells		Cell Lines Endogenously Expressing HB-EGF		
Antibody	CHO-K1	CHO-HB-EGF	MDA-MB231	SCC-9	COS-7
KLH	0.2	0.3	0.4	0.2	0.4
U2-18	0.3	154	3.1	1.2	1.6
U2-68	0.2	238	1.7	0.6	1.1
U2-24	0.2	360	2	0.6	6.7
U2-14	0.3	132	2.8	0.8	1.1
U2-1	0.2	64	1.8	0.7	3.1
U2-32	0.2	76	1.7	1.2	1.8
U2-40	0.2	137	2.1	1.3	1.1
U2-5	0.3	371	6.9	1.7	2.2
U2-8	0.3	148	3.7	1.4	1.4
U2-13	0.2	136	0.4(2.6)	0.5	0.8
U2-17	0.2	170	1.6	0.6	1.4
U2-19	0.4	347	5.5	1.8	6.1
U2-38	0.3	30	3.9	0.9	1.4
U2-21	0.2	344	3.9	3.4	2.1
U2-15	0.2	370	3	0.6	0.9
U2-16	0.2	197	1.5	0.4	0.9
U2-30	0.3	273	3.5	1	3.4
U2-44	0.3	5.6	0.8	0.2	5.2
U2-42	1.2	277	3.3	0.5	6.7
U2-36	0.9	112	1.6	0.3	4.9
U2-22	0.3	221	1.1	0.2	4.9
U2-56	0.2	38	0.5	0.2	1.8
Neg	0.2	0.2	0.3		
Pos (goat aHB)	0.2	80	3		

[000296]

[000297]

TABLE 3
FACS Analysis Of Anti-HB-EGF Antibody Supernatants (Cohort 2)

	CHO control cells vs. HB-EGF-expressing CHO cells		Cell Lines Endogenously Expressing HB-EGF		
Antibody	CHO-K1	CHO-HB-EGF	MDA-MB231	SCC-9	COS-7
U2-63	0.2	36(0.4)	0.5	0.2	0.6
U2-54	0.3	49	0.6	0.2	2.4
U2-65	0.2	1.9	0.4	0.2	0.3
U2-10	0.2	2.3	0.5	0.2	1.2
U2-53	0.2	144	0.5	0.2	0.6
U2-66	0.2	149	0.5	0.2	0.5
U2-61	0.4	28	0.4	0.2	1.4
U2-67	0.2	82	0.5	0.2	0.6
U2-28	0.3	198	1	0.2	3.2
U2-2	0.2	127	0.5	0.2	0.5
U2-62	0.2	47	0.5	0.2	0.6
U2-39	0.2	205	2.6	0.6	8.3
U2-3	0.2	168	0.9	0.2	2.5
U2-43	0.4	185	0.8	0.2	1.7
U2-34	0.7	125	1.2	0.3	6.4
U2-26	0.2	242	1.5	0.3	4.7
U2-41	0.3	186	1.2	0.2	3.3
U2-44	0.4	248	1.2	0.2	2.2
U2-45	0.6	248	1.4	0.2	6.4
U2-57	0.2	201	0.7	0.2	0.5
U2-12	0.6	1.2	1.2	0.5	1.6
U2-46	0.4	129	1	0.2	2.5
U2-48	0.4	273	1.3	0.3	2.1
U2-6	0.5	108	3.9	1.5	5.9
U2-58	0.2	277	0.9	0.2	0.4
U2-51	0.5	176	1.1	0.2	3.6
U2-60	0.2	3.6	0.4	0.2	0.3
Neg	0.2	0.2	0.3		
Pos (goat aHB)	0.2	80	3		

2. Inhibition of HB-EGF-Induced EGFR tyrosine phosphorylation

[000298]The following protocol was used to identify which anti-HB-EGF antibody preparations inhibit HB-EGF-induced epidermal growth factor receptor tyrosine phosphorylation. Such experiments further characterize the antibodies and help identify which hybridoma cell lines produce antibody that inhibit HB-EGF activity and then should be cloned and expanded.

[000299]40000 SCC9 human squamous cancer cells were seeded on a 96-well plate in 100 µl medium. Cells were starved in 60 µl serum free medium for 24 hr. A black Maxisorp 96-well plate was coated with 100 µl anti-EGFR antibody (2 µg/ml) overnight at 4°C. The coating solution was replaced by 300 µl blocking solution (PBS + 0.5% BSA) without washing and left to incubate 2 hours at room temperature. 10 µg/ml of IgG2-control (Sigma) or anti-HB-EGF hybridoma-derived antibodies were added to 20 ng/ml HB-EGF (R&D Systems) and preincubated for 30 minutes at 37 °C (volume: 40 µl). Cells were treated with medium alone or with the antibody/ligand solution for 3 minutes at 37°C. The medium was removed and cells were lysed on ice with 100 µl Triton-X-100-based lysis buffer containing 1 mM PMSF, 10 µg/ml Aprotinin, 10 mM NaF and 2 mM Na-Orthovanadate. The blocked Maxisorp plate was washed 6 times with PBS + 0.05% Tween-20. 80 µl of the cell lysate was transferred directly to the washed Maxisorp plate and incubated overnight at 4 °C with gentle agitation. The plate was washed 6 times with PBS + 0.05% Tween-20, then 100 µl 4G10-biotin (UBI) diluted 1:4000 in dilution buffer (PBS+0.5% BSA+0,05% Tween-20+5 mM EDTA) was added to each well and incubated for 2 hours at room temperature. The plate was washed 6 times with PBS + 0.05% Tween20 and 100 µl AP-conjugated streptavidin (UBI) diluted 1:20000 in dilution buffer (PBS+0.5% BSA+0,05% Tween20+5 mM EDTA) was added to each well for 30 minutes at room temperature. The plate was washed 6 times with PBS + 0.05% Tween-20 and 100 µl AttoPhos substrate was added to each well. The plate was incubated for up to 3 hours at room temperature in the dark and the developing fluorescence was monitored at 30, 90 and 180 min (Excitation: 430 nm, emission: 580 nm).

[000300]The percent inhibition of HB-EGF-induced EGFR tyrosine phosphorylation was calculated by reduction in the amount of phosphorylation observed with IgG2-control (Sigma) by each hybridoma-derived anti-HB-EGF antibody preparation.

[000301]Results for the different anti-HB-EGF antibody preparations are provided in FIGURES 23A and 23B. As illustrated, monoclonal antibody preparations U2-18, U2-24, U2-19, U2-42, U2-39, U2-34, U2-45 and U2-6 strongly inhibit EGFR tyrosine phosphorylation.

3. Anti-HB-EGF Antibody Preparations Inhibit LPA-Induced EGFR Phosphorylation

[000302]EGFR-dependent signaling pathways can be activated upon stimulation of G-protein-coupled receptors (GPCR). Ligand activation of heterotrimeric G proteins by interaction with a GPCR results in an intracellular signal that induces the extracellular activity of a transmembrane metalloproteinase. Ligands that can activate the GPCR pathway include LPA (lysophosphatidic acid), thrombin, carbachol, bombesin, and endothelin. Such activation leads to extracellular processing of a transmembrane growth factor precursor and release of the mature factor which, directly or through the proteoglycan matrix, interacts with the ectodomain of EGFR and activates it through phosphorylation. *See*, Prenzel *et al.*,1999, *Nature* 402:884-888.

[000303]The anti-HB-EGF antibody preparations provided herein were tested to ascertain whether they could inhibit EGFR tyrosine phosphorylation induced by the GPCR ligand LPA in COS-7 cells, using the following procedure.

[000304]250.000 COS-7 cells were seeded on a 6-well plate, in 2 ml medium and cultured over night. Cells were starved in 1 ml serum free medium for 24 hours. Following preincubation with antibodies (37°C, 1h), cells were stimulated with 10 µM LPA (37°C, 3 min) and lysed on ice with 400 µl Triton-X-100-based lysis buffer containing 1 mM PMSF, 10 µg/ml Aprotinin, 10 mM NaF and 2 mM Na-Orthovanadate. Following immunoprecipitation of the EGFR (340 µl lysate, 340 µl HNTG, 30 µl Prot. A Sepharose, 1.5µl αEGFR (108.1, Prenzel *et al.*, 1999, *supra*)) for 4 hours in the coldroom precipitates were washed 3 times with 500 µl HNTG buffer and run on a 7.5% SDS PAGE. Following transfer on a nitrocellulose membrane (Schleicher & Schuell) the blot was probed with an antibody recognizing phosphotyrosine residues (primary ab 4G10 (1:2000, Upstate biotechnology); secondary anti-mouse Ab 1:10000, Jackson laboratories). Reblot with sheep anti EGFR (Upstate technology) after stripping showed that equal amounts of the receptor were precipitated in each lane.

[000305]FIGURE 24 provides a western blot illustrating which anti-HB-EGF antibody preparations inhibit LPA-induced EGFR tyrosine phosphorylation. As shown in FIGURE 24, the U2-19 and U2-42 anti-HB-EGF antibody preparations strongly inhibited LPA-induced EGFR phosphorylation. The U2-24 anti-HB-EGF antibody preparation inhibited LPA-induced EGFR phosphorylation to a somewhat lesser extent.

E. Example 5: Hybridoma Cloning To Generate Monoclonal Antibodies

[000306]Based on the test results observed from experiments described in the preceding Examples, of the 49 original isolates, 43 hybridoma cell lines were selected for cloning by limiting dilution and further characterization of their monoclonal antibody. The lines selected for cloning bound to HB-EGF-expressing cell lines as exhibited by FACS analysis and inhibited HB-EGF-stimulation of EGF receptor tyrosine phosphorylation. For some hybridomas, insufficient

antibody was generated to run all the primary screening assays. This subset of hybridomas was advanced to hybridoma cloning as well.

F. Example 6: Further Characterization Of Antibody-Related Inhibition Of GPCR Induced Tyrosine Phosphorylation Of EGFR

[000307]This Example provides further data showing that several anti-HB-EGF antibody preparations provided herein exhibit dose-dependent inhibition of GPCR-induced EGF receptor tyrosine phosphorylation.

[000308]Inhibition by candidate antibody preparations U2-42, U2-39 and U2-45 was examined using different concentrations of these antibody preparations and the following procedure.

[000309]150,000 cells (MDA-MB231, PPC1) were seeded on a 12-well plate in 1 ml medium. Cells were starved in 500 µl serum free medium for 24 hr. A black Maxisorp 96-well plate was coated with 100 µl anti-EGFR antibody (2 µg/ml) overnight at 4°C. The coating solution was replaced by 300 µl blocking solution (PBS + 0.5% BSA) without washing and left to incubate 2 hours at room temperature.Cells were pre-incubated with 10 µg/ml anti-HB-EGF Abs for 30 minutes at 37°C and then treated with the GPCR ligands LPA (10 µM, PPC1 cells) or Thrombin (1U/ml, MDA-MB231 cells) for 3 minutes at 37 °C. The medium was removed and cells were lysed on ice with 200µl Triton-X-100-based lysis buffer containing 1 mM PMSF, 10 µg/ml Aprotinin, 10 mM NaF and 2 mM Na-Orthovanadate. The blocked Maxisorp plate was washed 6x with PBS + 0.05% Tween-20. Cell lysate was transferred directly to a washed Maxisorp plate and incubated overnight at 4 °C with gentle agitation.

[000310]The plate was washed 6 times with PBS + 0.05% Tween-20, then 100 µl 4G10-biotin (UBI) diluted 1:4000 in dilution buffer (PBS+0.5%BSA+0.05% Tween-20+5mM EDTA) was added to each well and incubated for 2 hours at room temperature. The plate was washed 6 times with PBS + 0.05% Tween-20 and 100µl AP-conjugated streptavidin (UBI) diluted 1:20000 in dilution buffer (PBS+0.5% BSA+0,05% Tween-20+5mM EDTA) was added to each well for 30 minutes at room temperature. The plate was washed 6 times with PBS + 0.05% Tween-20 and 100 µl Attophos substrate was added to each well. The plate was incubated for 3 hours at room temperature in the dark and the developing fluorescence was monitored at 30, 90 and 180 min (Excitation: 430 nm, emission: 580 nm).

[000311]As shown in FIGURE 26, inhibition of LPA-induced EGFR tyrosine phosphorylation was dose dependent – greater inhibition of EGFR tyrosine phosphorylation was observed as the amount of anti-HB-EGF antibody was increased.

[000312]FIGURE 25 illustrates that candidate antibody preparations U2-42, U2-39 and U2-45 also effectively inhibit thrombin-induced EGFR phosphorylation in MDA-MB231 cells. A dosage dependent inhibition is observed, with increased inhibition as more anti-HB-EGF antibody is added. FIGURE 26 illustrates that inhibition of LPA-induced EGFR tyrosine phosphorylation in

PPC-1 cells by anti-HB-EGF antibody preparations provided herein is dose dependent. As shown, greater inhibition of EGFR tyrosine phosphorylation was detected as the amount of anti-HB-EGF antibody was increased.

G. Example 7: Inhibition Of GPCR-Induced MDA-MB231 Cell Migration By Human Anti-HB-EGF Antibodies

[000313]Transmigration experiments were performed in order to investigate whether the antibodies provided herein block cell migration induced by the GPCR ligand Sphingosine-1-phosphate.

[000314]Serum-starved human breast cancer MDA-MB231 cells were preincubated with the indicated antibody to the cell suspension for 45 min at 37°C. Thereafter, 500 ml cell suspension (50,000 cells) was placed in the top chamber of collagen I-coated transwells (BD Falcon, 8 µm pores). 750 ml medium (MEM, amino acids, Na-Pyruvate, Pen.-Strept., 0.1% BSA) alone or containing the GPCR ligand Sphingosine-1-phosphate (R&D Systems) was used in the bottom chamber. After migration for 8 hours at 37°C cells were fixed, stained with DAPI and cell nuclei were counted for statistical evaluation.

[000315]The results for these MDA-MB231 cell migration assays using candidate anti-HB-EGF antibody preparations U2-42, U2-39 and U2-45 are provided in FIGURE 27. As shown, anti-HB-EGF antibody preparation U2-42 inhibited MDA-MB231 cell migration by about 70%; anti-HB-EGF antibody preparation U2-45 inhibited MDA-MB231 cell migration by about 100%; and anti-HB-EGF antibody preparation U2-39 inhibited MDA-MB231 cell migration by about 100%. Hence, the ability of these anti-HB-EGF antibodies to inhibit MDA-MB231 cell migration is substantial.

[000316]

H. Example 8: Inhibition Of HB-EGF-Induced Migration Of MCF-7 Cells By Human Anti-HB-EGF Antibodies

[000317]Transmigration experiments were performed in order to investigate whether the antibodies provided herein block cell migration that would otherwise be directly induced by HB-EGF. The results of these tests highlight which antibody preparations may be use for development as anti-metastatic cancer agents.

[000318]A 500 ml cell suspension of serum-starved human breast cancer MCF7 cells (50,000 cells) was placed in the top chamber of collagen I-coated transwells (BD Falcon, 8 µm pores). Aliquots of 750 ml medium (MEM, amino acids, Na-pyruvate, Pen.-Strept., 0,1% BSA) alone or containing 20 ng/ml HB-EGF (R&D Systems) in the presence or absence of 10 µg/ml HB-EGF antibodies were placed in the bottom chamber. After incubation and migration for 8 hours at 37°C, cells were fixed, stained with DAPI and cell nuclei were counted for statistical evaluation.

[000319]The results for these migration assays using candidate anti-HB-EGF antibody preparations U2-42, U2-39 and U2-45 are provided in FIGURE 28. As shown, anti-HB-EGF antibody preparation U2-42 inhibited MCF-7 cell migration by about 55%; anti-HB-EGF antibody preparation U2-45 inhibited MCF-7 cell migration by about 93%; and anti-HB-EGF antibody preparation U2-39 inhibited MCF-7 cell migration by about 98%. Hence, the ability of these anti-HB-EGF antibodies to inhibit MCF-7 cell migration is substantial.

I. Example 9: Characteristics Of Top 10 Anti-HB-EGF Antibodies

[000320]A summary of results is provided in TABLE 4, *infra*, for top 10 hybridoma-derived antibody preparations in GPCR-induced triple membrane-passing signal (TMPS) experiments. The TMPS experiments involved LPA-stimulation in SCC9 cells, thrombin stimulation in MDA-MB231 cells, LPA stimulation of SkOV-8 cells and Sphingosine-1-phosphate migration of MDA-MB231 cells. The data provided represent the percent inhibition of the TMPS transactivation signal that was observed when antibody preparations were used in the assays compared to the same assay when no antibody was present. The top three antibodies of each experiment are highlighted in bold letters.

[000321]

TABLE 4
Percent Inhibition of TMPS Transactivation Signal

	TMPS					Migration
Ab	SCC9.3	MDA-MB231	MDA-MB231	SkoV-8	SkoV-8	MDA-MB231
U2-39	**56.9**	**126.6**	**131.1**	**130.7**	65.5	**115**
U2-45	**58.5**	**136.8**	**95.7**	99.4	**75.1**	**104**
U2-42	**62.8**	123.2	**125.6**	**110.7**	**73.1**	69.9
U2-34	50.6	109.5	93.6	95.1	73	**99.6**
U2-46	36.6	88.1	77.5	80.5	**76.1**	n.d.
U2-19	n.d.	n.d.	n.d.	n.d.	n.d.	85
U2-26	n.d.	**143**	91.8	**106.1**	31.4	55.9
U2-51	n.d.	n.d.	n.d.	n.d.	n.d.	85.3
U2-15	n.d.	121.7	92.6	87	17.6	45.5
U2-22	n.d.	74.2	94.3	64.4	18.2	n.d.

J. Example 10: Inhibition Of HB-EGF-Induced HER4 Tyrosine Phosphorylationby Human Anti-HB-EGF Antibodies

[000322]This Example shows that anti-HB-EGF antibody preparations inhibit HB-EGF induced tyrosine phosphorylation of HER4. The following procedures were employed to assess the effects of anti-HB-EGF antibodies on HER4 tyrosine phosphorylation.

[000323]125,000 cells T47D human breast cancer cells were seeded on a 24-well plate in 500 µl medium. Cells were starved in 200 µl serum free medium for 24 hr. An R&D Systems Human Phospho-ErbB4 ELISA-Kit was used for detection of HER4 tyrosine phosphorylation. A clear Maxisorp 96-well plate was coated with 100 µl mouse anti-human-ErbB4 antibody (Capture Antibody 1 µg/ml) overnight at room temperature. The coated Maxisorp plate was washed 6 times with PBS+0.05%Tween-20, the washing solution was replaced by 300 µl blocking solution (PBS + 0.5% BSA) and incubated 2 hours at room temperature. 50 µl serum-free medium with 5x-concentration of anti-HB-EGF Abs (10 µg/ml) was incubated with 5x-concentration HB-EGF (20 ng/ml) for 30min at 37 °C, then added to each well (in duplicate). The medium was removed and cells were lysed on ice with 200 µl Triton-X-100-based lysis buffer containing 1 mM PMSF, 10 µg/ml Aprotinin, 10 mM NaF and 2 mM Na-Orthovanadate. The blocked Maxisorp plate was washed 3 times with PBS + 0.05% Tween-20. Cell lysate was transferred directly to a washed Maxisorp plate and incubated overnight at 4 °C with gentle agitation. The plate was washed 6 times with PBS+0.05% Tween-20, then 100 µl anti-Phospho-tyrosine-HRP (Detection Antibody 600ng/ml) diluted in dilution buffer (PBS+0.5%BSA+0,05% Tween-20+5 mM EDTA) was added to each well and incubated for 2 hours at room temperature. The plate was washed 6 times with PBS + 0.05% Tween20 and 100 µl Tetramethylbenzidine (TMB, Calbiochem) was added to each well for 20 minutes at room temperature. The reaction was stopped by addition of 50 µl 1 M H_2SO_4 and the absorbance was read at 450 nm (Thermo Lab Systems plate reader).

[000324]The results are shown in FIGURE 29. As illustrated, increasing concentrations of U2-42.1 or U2-39.1 anti-HB-EGF antibody preparations led to increased inhibition of HB-EGF-induced HER4 phosphorylation.

K. Example 11: Monoclonal Antibody Cross-Reactivity

[000325]This Example provides further data showing cross reactivity of anti-HB-EGF antibody preparations for the cyno HB-EGF, mouse HB-EGF and the related EGF-like growth factor Amphiregulin. Following cloning of the monkey and mouse form of HB-EGF, each expression construct was transfected in HEK293 cells and anti-HB-EGF antibodies were tested on their ability to bind these proteins in a FACS experiment. Amphiregulin cross reactivity was tested by ELISA format assay.

1. Cloning Cyno HB-EGF

[000326]In the present study, cyno HB-EGF plasmids were prepared. The cyno HB-EGF cDNA was cloned by polymerase chain reaction (PCR) from cyno kidney cDNA with primers based on the sequence of cyno HB-EGF.

[000327]The primers used for the amplification of cyno HB-EGF were as follows:

[000328]Forward primer: 5'-GGG TTA ACG CCA CCA TGA AGC TGC TGC CGT CG-3' (SEQ ID NO:1078)

[000329]Reverse primer: 5'-CCG CTC GAG GTG GGA ATT AGT CAT GCC C -3' (SEQ ID NO:1079)

[000330]The PCR product was digested with Hpa1 and Xho1 and ligated into pCDNA3.1 digested with Hind3. After purification, cyno HB-EGF plasmids were transformed into DH5α bacterial cells and multiplied under ampicilin selection. The plasmid was then highly expressed in ampicilin selection media using a single transformed colony. After purifying using a commercially available DNA-purification kit, cyno HB-EGF plasmids were transiently transfected in HEK293T cells.

2. Cloning Mouse HB-EGF

[000331]In the present study, mouse HB-EGF plasmids were prepared. The mouse HB-EGF cDNA was cloned by polymerase chain reaction (PCR) from mouse lung cDNA with primers based on the sequence of mouse HB-EGF.

[000332]The primers used for the amplification of mouse HB-EGF were as follows:

[000333]Forward primer: 5'-GGA ATT CGC CAC CAT GAA GCT GCT GCC GTC G-3' (SEQ ID NO:1080)

[000334]Reverse primer: 5'-CCG CTC GAG GTG GGA GCT AGC AGC CAC GCC-3' (SEQ ID NO:1081)

[000335]The PCR product and pCDNA3.1 vector DNA were digested with EcoR1 and Xho1 and ligated. After purification, mouse HB-EGF plasmids were transformed into DH5α bacterial cells and multiplied under ampicillin selection. The plasmid was then highly expressed in ampicillin selection media using a single transformed colony. After purifying using a commercially available DNA-purification kit, mouse HB-EGF plasmids were transiently transfected in HEK293T cells.

3. Transfection And Expression Of Cyno And Mouse HB-EGF

[000336]To screen for cross-reactivity of antibodies provided herein HEK293T cells were transiently transfected with either cyno or mouse HB-EGF plasmids using a Ca-phosphate method and subsequently analysed by FACS analysis.

[000337]Therefore, 30 hours before transfection, 3x106 HEK293T-cells were seeded in 16ml on a 15cm- cell culture plate and incubated at 7% CO_2 and 37°C. 32 µg DNA of either cyno or mouse HB-EGF DNA or empty vector in 720 µl ddH_2O were mixed with 2.5 M $CaCl_2$ and 2 x BBS (pH6.96) and incubated at room temperature for 10 minutes. After incubation, the solution was added drop wise onto the cells and incubated at 3% CO_2 and 37°C for 8 hours. After soaking the media, the cells were incubated with fresh growing media at 7% CO_2 and 37°C for 24 hours.

4. FACS Analysis Was Performed To Screen For Cross-Reactivity Of The Antibodies

[000338]Therefore, $2x10^5$ transfected cells were harvested with 10 mM EDTA in PBS, resuspended in FACS-buffer (PBS, 3% FCS, 0.4% azide) and seeded on a 96-well round bottom plate. After centrifugation for 3 min at 1000 rpm to remove supernatant, the cells were resuspended in anti-HB-EGF antibody dilution (100 µl/well) and incubated at 4°C for 45 min. The cells were washed twice with FACS buffer and resuspended with secondary antibody (100 µl/well) donkey-anti-human-PE (Jackson) diluted 1:100 in FACS buffer. The cell suspensions were incubated at 4 °C in the dark for 30 min, washed twice with FACS buffer and analyzed (FACS, Beckman Coulter).

[000339]FIGURE 30A shows that three mAb preparations cross-react with pro-HB-EGF from Cynomolgus monkeys.

[000340]FIGURE 30B shows that the U2-45 mAb preparation cross-reacts with mouse HB-EGF as detected by FACS analysis. Further testing showed that antibodies U2-46 and U2-51 were also detecting mouse HB-EGF. However, the antibody U2-45.1 was only very weakly (5-10%) neutralizing mouse HB-EGF induced tyrosine phosphorylation of the EGFR.

5. Protocol For Amphiregulin Cross Reactivity ELISA Assay

[000341]Different concentrations of Amphiregulin (R & D systems, conc. 1 ng/ml, 10ng/ml, 100ng/ml in PBS) were coated overnight at 4°C in a 96-well plate (Nunc, Maxisorp). Following plate wash (6-times) with washing buffer (PBS + 0,05% Tween 20; 150 µl per well), the plate was incubated with blocking buffer (PBS + 0,5% BSA, 100 µl / well) for 4 hours at room temperature. The plate was washed 6-times with washing buffer. As primary antibody 5 µg/ml purified human anti-HB-EGF antibodies in Ab dilution buffer (PBS containing 0.5% BSA, 0.05% Tween 20, 5 mM EDTA) were used and incubated for 90 minutes at room temperature. The plate was washed 6-times with washing buffer and a secondary anti human-POD (Dianova) antibody was added (1:10 000 in PBS, 0.5% BSA, 0.05% Tween 20, 5 mM EDTA) and incubated for 60 minutes at room temperature.

[000342]The plate was washed 6-times with washing buffer and the TMB substrate (Merck Biosciences) was added for 15 minutes at room temperature. After stopping the development of the blue color by adding 100 µl of 250 mM HCl the absorbance was measured at 450nm with a plate reader (Thermo labsystems).

[000343]FIGURE 30C shows that antibody U2-45 and weakly antibody U2-46 bind to Amphiregulin as determined by an ELISA format assay. The U2-45 mAb binds Amphiregulin but the U2-45.1 K_D for Amphiregulin was only 8 nM (versus 0.043 nM for HB-EGF). The U2-45.1 mAb was also non-neutralizing for AR.

L. Example 12: Kinetic Exclusion Assay Analysis Of K_d Values For Anti-HB-EGF Mabs U2-42.2, U2-39.1, U2-45.3, U2-26.2, And U2-34.1

[000344]The K_Ds of mAbs U2-42.2, U2-39.1, U2-45.3, and U2-26.2, and U2-34.1 binding to human HB-EGF, were determined using KinExA technology. For this purpose, a KinExA 3000 instrument was utilized. For all mAb titrations, 50 mg of azlactone beads were coupled with HB-EGF (~29 µg) in 50 mM sodium carbonate buffer, pH 9.0 overnight at 4 °C. After conjugation of HB-EGF to the beads, the beads were centrifuged and washed once with blocking buffer (1 M Tris buffer, pH 8.3, 10 mg/ml BSA) and centrifuged again, and then incubated in blocking buffer for one to two hours at ~23 °C in order to block any remaining reactive azlactone groups present on the surface of the beads. After blocking, the beads were transferred to a standard KinExA bead vial and placed on the instrument.

[000345]**MAb U2-42.2:** A dual curve analysis was performed to determine the K_D. Twelve solutions containing a nominal mAb binding site concentration of 37 pM were titrated with increasing concentrations of HB-EGF for the K_D-controlled titration, and 1110 pM binding site was titrated in the mAb-controlled titration curve. Each solution had a total volume of 10 ml (K_D-controlled) or 2 ml (mAb-controlled) and was allowed to equilibrate for 30-36 hours (K_D-controlled) or 6 hours (mAb-controlled) at ~23 °C. All solutions for the titration were prepared using volumetric glassware and the HB-EGF concentrations varied from 10.5 nM to 205 fM. The instrument method used for the analysis of these solutions consisted of a bead packing step in which the beads were packed into a glass capillary, and the equilibrated solutions were flowed through the bead column at 0.25 ml/min for 10 min (2.5 ml, K_D-controlled) or 1 min (0.25 ml, mAb-controlled) in triplicate. Subsequently, a fluorescently labeled cy-5 goat anti-human (Fc specific) polyclonal antibody at 3.4 nM (K_D-controlled) or 1.1 nM (mAb-controlled) was flowed through the bead pack for 2 min at 0.5 ml/min to label the free mAb binding site captured on the beads. The fluorescence emission from the bead pack was measured at 670 nm with excitation at 620 nm.

[000346]The resulting fluorescence measurements were converted into %-free mAb binding site versus total antigen concentration as standardly done with the accompanying KinExA software package (version 1.0.3). The dual titration curves were fit with the KinExA software to a 1:1 equilibrium isotherm with drift correction factors included.

[000347]The value of the K_D that fit the data optimally was 53 pM with low and high 95% confidence limits at 34 pM and 81 pM, respectively.

[000348]MAb U2-39.1: A K_D-controlled titration curve was performed to determine the K_D. Twelve solutions containing a nominal mAb binding site concentration of 55 pM were titrated with increasing concentrations of HB-EGF. Each solution had a total volume of 10 ml and was allowed to equilibrate for 30-36 hours at ~23 °C. All solutions for the titration were prepared using volumetric glassware and the HB-EGF concentrations varied from 10.5 nM to 205 fM. The instrument method used for the analysis of these solutions consisted of a bead packing step in which the beads were packed into a glass capillary, and the equilibrated solutions were flowed through the bead column at 0.25 ml/min for 10 min (2.5 ml) in triplicate. Subsequently, a fluorescently labeled cy-5 goat anti-human (Fc specific) polyclonal antibody at 3.4 nM was flowed through the bead pack for 2 min at 0.5 ml/min to label the free mAb binding site captured on the beads. The fluorescence emission from the bead pack was measured at 670 nm with excitation at 620 nm. The resulting fluorescence measurements were converted into %free mAb binding site versus total antigen concentration using the accompanying KinExA software package (version 1.0.3). Owing to ligand nonspecific binding to the bead pack, the titration curve was fit with the KinExA software to a 1:1 equilibrium isotherm with a term for ligand nonspecific binding included.

[000349]The value of the K_D that fit the data optimally was 7.8 pM with low and high 95% confidence limits at 5.6 pM and 11 pM, respectively.

[000350]MAb U2-45.3: A dual curve analysis was performed to determine the K_D. Twelve solutions containing a nominal mAb binding site concentration of 40 pM were titrated with increasing concentrations of HB-EGF for the K_D-controlled titration, and 1060 pM binding was titrated in the mAb-controlled titration curve. Each solution had a total volume of 10 ml (K_D-controlled) or 2 ml (mAb-controlled) and was allowed to equilibrate for 30-36 hours (K_D-controlled) or 6 hours (mAb-controlled) at ~23 °C. All solutions for the titration were prepared using volumetric glassware and the HB-EGF concentrations varied from 5.25 nM to 102 fM. The instrument method used for the analysis of these solutions consisted of a bead packing step in which the beads were packed into a glass capillary, and the equilibrated solutions were flowed through the bead column at 0.25 ml/min for 10 min (2.5 ml, K_D-controlled) or 1 min (0.25 ml, mAb-controlled) in triplicate. Subsequently, a fluorescently labeled cy-5 goat anti-human (Fc specific) polyclonal antibody at 3.4 nM (K_D-controlled) or 1.1 nM (mAb-controlled) was flowed

through the bead pack for 2 min at 0.5 ml/min to label the free mAb binding site captured on the beads. The fluorescence emission from the bead pack was measured at 670 nm with excitation at 620 nm. The resulting fluorescence measurements were converted into %free mAb binding site versus total antigen concentration as standardly done with the accompanying KinExA software package (version 1.0.3). The dual titration curves were fit with the KinExA software to a 1:1 equilibrium isotherm with drift correction factors included.

[000351]The value of the K_D that fit the data optimally was 43 pM with low and high 95% confidence limits at 27 pM and 65 pM, respectively.

[000352]MAb U2-26.2: A dual curve analysis was performed to determine the K_D. Twelve solutions containing a nominal mAb binding site concentration of 41 pM were titrated with increasing concentrations of HB-EGF for the K_D-controlled titration, and 1060 pM binding site was titrated in the mAb-controlled titration curve. Each solution had a total volume of 10 ml (K_D-controlled) or 2 ml (mAb-controlled) and was allowed to equilibrate for 30-36 hours (K_D-controlled) or 6 hours (mAb-controlled) at ~23 °C. All solutions for the titration were prepared using volumetric glassware and the HB-EGF concentrations varied from 2.63 nM-51.4 fM (K_D-controlled) and 5.26 nM-103 fM (mAb-controlled). The instrument method used for the analysis of these solutions consisted of a bead packing step in which the beads were packed into a glass capillary, and the equilibrated solutions were flowed through the bead column at 0.25 ml/min for 10 min (2.5 ml, K_D-controlled) or 1 min (0.25 ml, mAb-controlled) in triplicate. Subsequently, a fluorescently labeled cy-5 goat anti-human (Fc specific) polyclonal antibody at 3.4 nM (K_D-controlled) or 1.1 nM (mAb-controlled) was flowed through the bead pack for 2 min at 0.5 ml/min to label the free mAb binding site captured on the beads. The fluorescence emission from the bead pack was measured at 670 nm with excitation at 620 nm. The resulting fluorescence measurements were converted into %free mAb binding site versus total antigen concentration as standardly done with the accompanying KinExA software package (version 1.0.3). The dual titration curves were fit with the KinExA software to a 1:1 equilibrium isotherm with drift correction factors included.

[000353]The value of the K_D that fit the data optimally was 61 pM with low and high 95% confidence limits at 37 pM and 100 pM, respectively.

[000354]MAb U2-34.1: A K_D-controlled titration curve was performed to determine the K_D. Twelve solutions containing a nominal mAb binding site concentration of 40 pM were titrated with increasing concentrations of HB-EGF. Each solution had a total volume of 10 ml and was allowed to equilibrate for 30-36 hours at ~23 °C. All solutions for the titration were prepared using volumetric glassware and the HB-EGF concentrations varied from 5.26 nM-103 fM. The instrument method used for the analysis of these solutions consisted of a bead packing step in which the beads were packed into a glass capillary, and the equilibrated solutions were flowed

through the bead column at 0.25 ml/min for 10 minutes (2.5 ml) in triplicate. Subsequently, a fluorescently labeled cy-5 goat anti-human (Fc specific) polyclonal antibody at 5.1 nM was flowed through the bead pack for 2 minutes at 0.5 ml/min to label the free mAb binding site captured on the beads. The fluorescence emission from the bead pack was measured at 670 nm with excitation at 620 nm. The resulting fluorescence measurements were converted into %free mAb binding site versus total antigen concentration as standardly done with the accompanying KinExA software package (version 1.0.3). Owing to ligand nonspecific binding to the bead pack, the titration curve was fit with the KinExA software to a 1:1 equilibrium isotherm with a term for ligand nonspecific binding included.

[000355]The value of the K_D that fit the data optimally was 59 pM with low and high 95% confidence limits at 32 pM and 87 pM, respectively.

M. Example 13: Determination Of Antibody Affinity Scatchard Analysis

[000356]Affinity measurements of antibodies provided herein were performed by indirect FACS Scatchard analysis. To perform this analysis $2x10^5$ cells of interest were harvested with 10 mM EDTA in PBS, resuspended in FACS-buffer (PBS, 3% FCS, 0.4% azide) and seeded on a 96-well round bottom plate. After centrifugation for 3 min at 1000 rpm to remove supernatant, the cells were resuspended in anti-HB-EGF antibody dilution (100 µl/well) starting with 20 µg/ml, diluted in 1:2 dilution steps. Cell suspensions were incubated at 4 °C for 45 min, washed twice with FACS buffer and resuspended with secondary antibody (100 µl/well) donkey-anti-human-PE (Jackson) diluted 1:100 in FACS buffer. The cell suspensions were incubated at 4 °C in the dark for 30 min, washed twice with FACS buffer and analyzed (FACS, Beckman Coulter).

[000357]According to the FACS Scatchard analysis, the fluorescence mean was calculated for each measurement. Background fluorescence of cells without HB-EGF antibodies was subtracted from each fluorescence mean. Scatchard plot with x-value = fluorescence mean and y-value = fluorescence mean/concentration of mAb (nM) was generated. The K_D was taken as the absolute value of 1/m of linear equation.

TABLE 5
FACS Scatchard Determined Affinities Of Antibodies U2-42 And U2-39 On Three Different Human Cancer Cell Lines

Cell line / Antibody	DLD-1	NCI-ADR	MDA-MB231
U2-42	4,88	5,98	0,41
U2-39	9,05	7,63	6,21

N. Example 14: Kinetic Exclusion Assay Analysis Of K_d Values For Anti-HB-EGF Mab U2-45.3 Binding To Amphiregulin

[000358]A K_D-controlled titration curve was performed to determine the K_D. Twelve solutions containing a nominal mAb binding site concentration of 4.4 nM were titrated with increasing concentrations of Amphiregulin. Each solution had a total volume of 10 ml and was allowed to equilibrate for 30-36 hours at ~23 °C. All solutions for the titration were prepared using volumetric glassware and the Amphiregulin concentrations varied from 1.23 µM to 24 pM. The instrument method used for the analysis of these solutions consisted of a bead packing step in which the beads were packed into a glass capillary, and the equilibrated solutions were flowed through the bead column at 0.25 ml/min for 1 minute (0.25 ml) in triplicate. Subsequently, a fluorescently labeled cy-5 goat anti-human (Fc specific) polyclonal antibody at 684 pM was flowed through the bead pack for 2 minutes at 0.5 ml/min to label the free mAb binding site captured on the beads. The fluorescence emission from the bead pack was measured at 670 nm with excitation at 620 nm. The resulting fluorescence measurements were converted into %free mAb binding site versus total antigen concentration as standardly done with the accompanying KinExA software package (version 1.0.3). Owing to ligand nonspecific binding to the bead pack, only one replicate out of the three collected at each concentration (the highest three 2-fold Amphiregulin concentrations were excluded from the analysis) could be analyzed and fit with the KinExA software to a 1:1 equilibrium isotherm.

[000359]The value of the K_D that fit the data optimally was 5.0 nM with low and high 95% confidence limits at 3.1 nM and 7.7 nM, respectively.

O. Example 15: Selection Criterion For Top Antibody Preparations

[000360]The following criteria were used to identify the top antibody preparations: potency in inhibiting TMPS, potency in directly inhibiting HB-EGF as measured by observing the degree to which the antibodies inhibited tyrosine phosphorylation of EGF receptor and HER4, the affinity of the antibodies for HB-EGF, the cross-reactivity of the antibodies for other molecules and the characteristics of the epitopes.

P. Example 16: Anti-Hb-Egf Antibodies Inhibit HB-EGF Stimulation Of Huvec Cellular Proliferation And Tube Formation

[000361]This Example illustrates that while HB-EGF stimulates human vascular endothelial cell (HUVEC) proliferation, anti-HB-EGF antibodies provided herein inhibit basal HUVEC cell proliferation. Also, as shown by this Example, anti-HB-EGF antibodies inhibit HUVEC tube formation, which is an *in vitro* model for neo-angiogenesis. Antibody preparations that inhibit

HUVEC proliferation and/or angiogenesis are useful not only for treating cancer but also for treating non-cancerous conditions involving undesired angiogenesis (*e.g.*,diabetic retinopathy).

1. Procedures: Determination of HB-EGF Expression on HUVEC Cells by Flow Cytometry

[000362]HB-EGF expression on human endothelial cells was determined by FACS analysis. Therefore, $2x10^5$ cells of interest were harvested with 10 mM EDTA in PBS, resuspended in FACS-buffer (PBS, 3% FCS, 0.4% azide) and plated on a 96-well round bottom plate. After centrifugation for 3 min at 1000 rpm, supernatant was removed, the cells were resuspended in anti-HB-EGF antibody dilution (100 µl/well, 10 µg/ml anti-HB-EGF antibody) and incubated at 4°C for 45 min. The cells were washed twice with FACS buffer and resuspended with secondary antibody (100 µl/well) anti-human-PE (Jackson) diluted 1:100 in FACS buffer. The cell suspensions were incubated at 4 °C in the dark for 30 min, washed twice with FACS buffer and analyzed (FACS, Beckman Coulter).

[000363]To test for the effects of anti-HB-EGF antibodies on HUVEC proliferation, approximately 5000 HUVEC cells were seeded into each of 48 wells containing media with EGM-2, hydrocortisone, ascorbic acid, gentamycin-amphothericin and 2% FCS containing bFGF, VEGF, EGF and IGF-1 (Cambrex). After incubating the cells overnight at 37 C, the cells were washed twice with PBS containing 0.5% FCS. The cells were then starved 8h in EGM-2, 0.5% FCS without supplementation of growth factors. HB-EGF or anti-HB-EGF antibody preparations were added in 500 µl starvation media.

[000364]Cells were then cultured for an additional 60 hours, trypsinized and counted.

[000365]To test for the effects of anti-HB-EGF antibodies on HUVEC tube formation, 200 µl growth factor reduced matrigel (BD biosciences) was plated on 48 wells. 250 µl HUVEC medium was added per 48 well (EBM-2 + hydrocortisone + ascorbic acid gentamycin-amphothericin + 0,25% FCS from Cambrex). Following preincubation for 20 min, 20,000 HUVEC cells in 50 µl medium + 0.25% FCS containing HB-EGF (10 ng/ml) or U2-42, U2-39 or U2-45 anti-HB-EGF antibodies (10 µg/ml) were added. Tube formation was monitored by obtaining photomicrographs of representative areas of the culture wells. For a quantitative analysis closed areas of HUVEC tubes were counted.

2. Results

[000366]As shown by the FACS analysis in FIGURE 30, HB-EGF is expressed on HUVECs. The results of the cellular proliferation tests are provided in FIGURES 32A-B. As shown in FIGURE 32A, HB-EGF stimulates HUVEC cellular proliferation by about 38%. However, upon addition of anti-HB-EGF antibody preparations U2-42, U2-39 or U2-45, such stimulation of

cellular proliferation is inhibited by about 8% to 14% (FIGURE 31B). In this assay, the U2-39 anti-HB-EGF antibody preparation provided the highest level of inhibition.

[000367]The results of the tube formation tests are provided in FIGURES 33A-M. Control assays, without anti-HB-EGF antibodies shown in FIGURES 34A-C, show that HUVEC cells join to form circular structures or "tubes." However, upon addition of anti-HB-EGF antibody preparations U2-42, U2-39 or U2-45, such tube formation is inhibited. A summary of the number of tubes observed is provided in FIGURE 33M. As shown in FIGURE 33M, the U2-42 anti-HB-EGF antibody preparation provided the highest acceleration of tube regression, followed by the U2-39 anti-HB-EGF antibody preparation.

Q. Example 17: Anti-HB-EGF Antibodies Inhibit HB-EGF-Stimulated And Basal Colony Formation

[000368]Soft agar assays were conducted in order to investigate the ability of the antibodies provided herein to inhibit anchorage independent cell growth. The soft agar colony formation assay is a standard *in vitro* assay to test for transformed cells, as only such transformed cells can grow in soft agar.

[000369]To perform this assay, OVCAR-8, BM-1640 and NCI-H226 cells were incubated with 10 ng/ml HB-EGF and with anti-HB-EGF antibodies or IgG2 (SIGMA) as negative control, at 20 µg/ml in IMDM medium (Gibco) and resuspended in 0.2% Difco noble agar. The cell suspension was plated on a 0.4% agar-underlayer in quadruplicate in a 96-well plate and overlaid with IMDM medium. Colonies were allowed to form for approximately 14 days and were then stained with 40µl MTT (Sigma, 1 mg/ml in PBS) for 4 hours. Stimulation of HB-EGF and inhibitory effects of anti-HB-EGF antibodies were quantified by HTSBonit (LemnaTec) colony formation software.

[000370]In another assay, 750 or 1000 cells (depending on SkOV-3 clone 71 or 74, FIGURE 34D and E) were preincubated with anti-HB-EGF antibodies or IgG2 (SIGMA) as negative control, at 20 µg/ml in IMDM medium (Gibco) for 30 min at 37 °C and resuspended in 0.4% Difco noble agar (or 0.2% for clone 74). The cell suspension was plated on a 0.75% agar-underlayer (0.4% for clone 74) in quadruplicate in a 96-well plate and overlaid with IMDM medium. In a similar assay, 2000 BxPC-3 cells (FIGURE 34F) were preincubated with 20 µg/ml anti-HB-EGF antibodies or 20 µg/ml IgG2 (SIGMA) as negative control, in IMDM medium (Gibco) containing 20% FCS for 30 min at 37 °C. Cells were resuspended in 0.4% Difco noble agar and the cell suspension was plated on a 0.75% agar-underlayer in quadruplicate in a 96-well plate. The wells were overlaid with IMDM medium. Both layers contained 20% FCS.

[000371]Colonies were allowed to form for approximately 14 days and were then stained with 40µl MTT (Sigma, 1 mg/ml in PBS) for 4 hours. Results are shown in FIGURES 34A-F, which illustrate that HB-EGF stimulated colony formation (FIGURE 34A-C) and basal colony formation

(FIGURES 34D-F) is significantly reduced by the anti-HB-EGF antibodies. As shown, for example, in FIGURE 34A, HB-EGF stimulated OVCAR-8 cells to form a significantly larger mean colony size than control OVCER-8 cells cultured without HB-EGF. However, when OVCAR-8 cells were cultured with anti-HB-EGF U2-39 antibodies in the presence of HB-EGF, mean colony size was reduced to a size similar to that observed for control cells without HB-EGF treatment (FIGURE 34A). Similar results were observed for BM1604 cells (derived from prostate cancer tissue) (*see*, FIGURE 34B). Anti-HB-EGF U2-45 and U2-42 antibodies also inhibited BM1604 colony formation.

[000372]Anti-HB-EGF antibodies also inhibit HB-EGF-stimulated colony formation of NCI-H226 lung carcinoma cells (FIGURE 34C). As shown in FIGURE 36C, when NCI-H226 cells were cultured with anti-HB-EGF U2-39 antibodies in the presence of HB-EGF, mean colony size was reduced to a size similar to that observed for control cells without HB-EGF treatment.

[000373]The numbers of colonies, as well as the colony size, are reduced by the treatment with the present anti-HB-EGF antibodies (FIGURES 34D-F). Thus, FIGURE 34D illustrates that anti-HB-EGF antibodies reduce the number of basal colonies formed by SkOV-3 HB-EGF clone 71 cells (derived from SkOV-3 ovarian cancer cells stably transfected with a proHB-EGF expression construct). As shown, control SkOV-3 cells overexpressing HB-EGF formed large numbers of colonies. However, when SkOV-3 HB-EGF cl. 71 cells were cultured with either anti-HB-EGF U2-42 or U2-39 antibodies in the presence of HB-EGF, the number of colonies was dramatically reduced. Similarly, anti-HB-EGF antibodies inhibit colony formation of SkOV-3 (clone 74) cells, derived from ovarian cancer tissue, and BxPC3 cells, derived from pancreatic adenocarcinoma tissue (FIGURES 34E-F).

[000374]These data indicate that colony formation and tumors by a large variety of cancer cell types can be inhibited by the present anti-HB-EGF antibodies, including the U2-42, U2-39 and U2-45 antibody preparations provided herein.

R. Example 18: Anti HB-EGF Antibodies Inhibit Tumor Growth *In Vivo*

[000375]FIGURES 37 illustrates the mean volume of pancreatic BxPC3 tumors formed in xenograft experiments with SCID mice. As shown, established tumor growth was significantly inhibited in the presence of antibody preparations U2-42 and/or U2-39 when compared to the vehicle control. In FIGURE 38A it is shown that anti-HB-EGF antibodies U2-42, U2-39 and U2-45 inhibit the established growth of EFO-27 HB-EGF clone 58 cells *in vivo*. The effect of tumor growth inhibition could be shown to be dose-dependent, with 25 mg/kg as a highly effective treatment while lower doses such as 1 or 5 mg/kg were less efficient (FIGURE 38B).

S. Example 19: Anti-HB-EGF Antibodies In Combination Therapy With The Antiegfr Antibody Erbitux

[000376]FIGURE 35 shows that single agent inhibition of EFO-27 HB-EGF cl. 58 cells with anti-HB-EGF antibodies is moderate to strong. However, in a dose-controlled combination of anti-HB-EGF and anti-EGFR antibodies the inhibition of colony formation is extremely effective. Moreover, *in vivo* xenograft growth is strongly inhibited by the anti-HB-EGF and anti-EGFR antibody combination leading to a complete regression of ovarian cancer tumor growth (FIGURE 38C).

T. Example 20: HB-EGF Expression On A Variety Of Cancer Cell Types

[000377]HB-EGF expression on human cancer cell-lines was determined by FACS analysis. To perform this analysis $2x10^5$ cells were harvested with 10 mM EDTA in PBS, resuspended in FACS-buffer (PBS, 3% FCS, 0.4% azide) and transferred to a 96-well round bottom plate. After centrifugation for 3 min at 1000 rpm to remove supernatant, the cells were resuspended in anti-HB-EGF antibody dilution (100 µl/well) and incubated at 4°C for 45 min. The cells were washed twice with FACS buffer and resuspended with secondary antibody (100 µl/well) donkey-anti-human-PE (Jackson) diluted 1:100 in FACS buffer. The cell suspensions were incubated at 4 °C in the dark for 30 minutes, washed twice with FACS buffer and analyzed (FACS, Beckman Coulter).

[000378]The results of these assays are shown in TABLE 6, below.

[000379]

TABLE 6
HB-EGF Expression in Cancer Cells

Cell line	Tissue	Expression Level
MDA-MB231	Breast	++
NCI-ADR	Breast	+++
ZR75-1	Breast	-/+
MKN-1	Gastric	+
MKN-28	Gastric	+++
PPC1	Prostate	++
PC3	Prostate	++
HT144	Melanoma	-/+
MelGerlach	Melanoma	+++
IGROV-1	Ovarian	+
ES2	Ovarian	++
SkOV-3	Ovarian	+
SkOV-8	Ovarian	+
TOV21G	Ovarian	++
OVCAR-8	Ovarian	+++
Calu-6	Lung	+
NCI-H460	Lung	++
MS-751	Cervix	++
SIHA	Cervix	+
HelaS3	Cervix	+
U266	Myeloma	-
SCABER	Bladder	++
HCT-116	Colon	++
HCT-15	Colon	+
SW620	Colon	++

U. Example 21: Anti-HB-EGF Antibodies For The Detection Of HB-EGF In Tissue And Body Fluids By Immunohistochemistry And Elisa

[000380]Anti-HB-EGF antibodies U2-42 and U2-39 were tested for their ability to stain HB-EGF expressed in human fixed samples. As shown in FIGURE 39A both antibodies show a prominent membrane and cytoplasmic staining of human kidney tubular cells while the control does not show any staining. In addition to the immunohistochemical detection of HB-EGF in

patient tissue samples HB-EGF is released as a growth factor into various body fluids. Based on human anti-HB-EGF antibodies as coating reagents an ELISA was established which detects HB-EGF in liquid samples down to levels below 40 pg/ml (FIGURE 39B).

V. Example 22: Canonical Classes Of Antibodies

[000381]The genes encoding top antibodies were sequenced as described in the last Example. This sequence data was used to assign the antibodies to canonical classes.

[000382]Chothia *et al.* have described antibody structure in terms of "canonical classes" for the hypervariable regions of each immunoglobulin chain (Chothia, *et al.*, 1987, *J. Mol. Biol.*, 196(4) :901-17). The atomic structures of the Fab and VL fragments of a variety of immunoglobulins were analyzed to determine the relationship between their amino acid sequences and the three-dimensional structures of their antigen binding sites. Chothia *et al.* found that there were relatively few residues that, through their packing, hydrogen bonding or the ability to assume unusual phi, psi or omega conformations, were primarily responsible for the main-chain conformations of the hypervariable regions. These residues were found to occur at sites within the hypervariable regions and in the conserved α-sheet framework. By examining sequences of immunoglobulins having unknown structure, Chothia, *et al.* show that many immunoglobulins have hypervariable regions that are similar in size to one of the known structures and additionally contained identical residues at the sites responsible for the observed conformation.

[000383]Their discovery indicated that these hypervariable regions have conformations close to those in the known structures. For five of the hypervariable regions, the repertoire of conformations appeared to be limited to a relatively small number of discrete structural classes. These commonly occurring main-chain conformations of the hypervariable regions were termed "canonical structures." Further work by Chothia, *et al.*, 1989; *Nature* 342:877-83) and others (Martin *et al.*, 1996; J. *Mol. Biol.* 263:800-15) confirmed that there is a small repertoire of main-chain conformations for at least five of the six hypervariable regions of antibodies.

[000384]The complementarity determining regions (CDRs) of each antibody preparation were analyzed to determine their canonical class. As is known, canonical classes have only been assigned for CDR1 and CDR2 of the antibody heavy chain, along with CDR1, CDR2 and CDR3 of the antibody light chain. The TABLES below summarize the results of the analysis. The Canonical Class data is in the form of HCDR1-HCDR2-LCDR1-LCDR2-LCDR3 (H1-H2-L1-L2-L3), wherein "HCDR" refers to the heavy chain CDR and "LCDR" refers to the light chain CDR. Thus, for example, a canonical class of 1-3-2-1-1 refers to an antibody that has a HCDR1 that falls into canonical class 1, a HCDR2 that falls into canonical class 3, a LCDR1 that falls into canonical class 2, a LCDR2 that falls into canonical class 1, and a LCDR3 that falls into canonical class 1.

[000385]Assignments were made to a particular canonical class where the amino acids in the antibody match with the amino acids defined for each canonical class. The amino acids defined for each canonical class can be found, for example, in the articles by Chothia, *et al.* referred to above. TABLE 7 and TABLE 8 report the canonical class assignments for each of the HB-EGF antibodies. Where there was no matching canonical class, the canonical class assignment is marked with a letter s and a number, such as "s18", meaning the CDR is of size 18.

[000386]

TABLE 7

Antibody (sorted)	H1-H2-L1-L2-L3	H3length
U2-18.1	3-1-2-1-1	17
U2-13.1	1-3-4-1-1	14
U2-19.1	3-1-3-1-1	13
U2-38.1	3-1-2-1-1	23
U2-21.1	3-1-3-1-s9	8
U2-15.1	1-3-4-1-1	14
U2-16.1	1-2-8-1-1	11
U2-30.1	1-2-3-1-1	13
U2-42.1	1-3-2-1-s9	8
U2-36.1	3-s18-2-1-s10	13
U2-22.1	1-3-3-1-1	11
U2-56.1	3-1-2-1-1	8
U2-24.1	3-s16-3-1-s9	12
U2-24.2.1	3-s16-3-1-s9	12
U2-14.1	1-3-4-1-1	14
U2-1.1	1-3-4-1-1	5
U2-32.1	1-1-3-1-1	15
U2-40.1	1-3-2-1-3	8
U2-5.1	1-3-4-1-1	6
U2-8.1	3-1-4-1-1	17
U2-39.1	1-3-2-1-1	6
U2-3.1	3-1-4-1-1	16
U2-43.1	1-1-2-1-1	12
U2-34.1	1-3-2-1-1	16
U2-26.1	3-1-3-1-s9	9

U2-41.1	1-3-2-1-1	12
U2-45.1	1-3-2-1-1	19
U2-54.1	3-1-2-1-1	15
U2-57.1	3-1-2-1-1	8
U2-12.1	1-3-2-1-s9	9
U2-46.1	1-3-2-1-1	16
U2-48.2	1-1-2-1-1	12
U2-6.1.1	1-3-4-1-1	11
U2-6.1.2	1-3-2-1-1	16
U2-58.1	3-s16-2-1-1	8
U2-51.1	1-3-2-1-1	16
U2-65.2	3-1-2-1-1	8
U2-53.1	1-1-2-1-1	12
U2-61.1	1-3-2-1-1	9
U2-28.1	3-1-3-1-s9	12

TABLE 8

Antibody	H1-H2-L1-L2-L3 (sorted)	H3 Length
U2-43.1	1-1-2-1-1	12
U2-48.2	1-1-2-1-1	12
U2-53.1	1-1-2-1-1	12
U2-32.1	1-1-3-1-1	15
U2-30.1	1-2-3-1-1	13
U2-16.1	1-2-8-1-1	11
U2-39.1	1-3-2-1-1	6
U2-61.1	1-3-2-1-1	9
U2-41.1	1-3-2-1-1	12
U2-34.1	1-3-2-1-1	16
U2-46.1	1-3-2-1-1	16
U2-6.1.2	1-3-2-1-1	16
U2-51.1	1-3-2-1-1	16
U2-45.1	1-3-2-1-1	19
U2-40.1	1-3-2-1-3	8
U2-42.1	1-3-2-1-s9	8
U2-12.1	1-3-2-1-s9	9
U2-22.1	1-3-3-1-1	11
U2-1.1	1-3-4-1-1	5
U2-5.1	1-3-4-1-1	6
U2-6.1.1	1-3-4-1-1	11
U2-13.1	1-3-4-1-1	14
U2-15.1	1-3-4-1-1	14
U2-14.1	1-3-4-1-1	14
U2-56.1	3-1-2-1-1	8
U2-57.1	3-1-2-1-1	8
U2-65.2	3-1-2-1-1	8
U2-54.1	3-1-2-1-1	15
U2-18.1	3-1-2-1-1	17
U2-19.1	3-1-3-1-1	13
U2-21.1	3-1-3-1-s9	8

U2-26.1	3-1-3-1-s9	9
U2-28.1	3-1-3-1-s9	12
U2-3.1	3-1-4-1-1	16
U2-8.1	3-1-4-1-1	17
U2-58.1	3-s16-2-1-1	8
U2-24.1	3-s16-3-1-s9	12
U2-24.2.1	3-s16-3-1-s9	12
U2-36.1	3-s18-2-1-s10	13
U2-38.1	3-1-2-1-1	23

[000387]TABLE 9 is an analysis of the number of antibodies per class. The number of antibodies having the particular canonical class designated in the left column is shown in the right column.

[000388]The most commonly seen structure is 1-3-2-1-1. Eight out of a total of 40 mAbs had this combination.

[000389]

TABLE 9
Number of Anti-HB-EGF Antibodies in Each Canonical Class Combination

H1-H2-L1-L2-L3	Count
1-1-2-1-1	3
1-1-3-1-1	1
1-2-3-1-1	1
1-2-8-1-1	1
1-3-2-1-1	8
1-3-2-1-3	1
1-3-2-1-s9	2
1-3-3-1-1	1
1-3-4-1-1	6
3-1-2-1-1	5
3-1-3-1-1	1
3-1-3-1-s9	3
3-1-4-1-1	2
3-s16-2-1-1	1
3-s16-3-1-s9	2
3-s18-2-1-s10	1
3-1-2-1-1	1

W. Example 23: Epitope Mapping Of Anti HB-EGF Antibodies

[000390]This Example describes the mapping of epitopes recognized by antibody preparations.

[000391]Antibodies tested: Five XenoMouse derived human monoclonal antibody preparations capable of neutralizing the activity of HB-EGF were analyzed: U2-39; U2-42; U2-45; U2-26 and U2-19. Four of these monoclonal antibody preparations were shown to be specific for human HB-EGF while antibody preparation U2-45 exhibited some cross-reactivity with mouse HB-EGF and human Amphiregulin. All of these neutralizing antibody preparations map to MCAB Bins 7 & 8 (*see*, below).

1. Epitope Mapping

[000392]The human HB-EGF cDNA was isolated from HeLa mRNA by PCR amplification and the mature HB-EGF sequence was cloned into a pSecTAg vector as a myc-His fusion protein,

using the Ig kappa signal peptide sequence. The mature HB-EGF polypeptide was expressed in 293T cells, with secretion into the media.

[000393]The diphtheria toxin binding site of HB-EGF was mutated as well as the EGF receptor binding site by site-directed mutagenesis.

[000394]The short form of HB-EGF (Loukianov *et al*; *Gene* 195:81-86), missing the third disulphide bond of the EGF-like domain, was also cloned.

[000395]The EGF-like domain of HB-EGF having SEQ ID NO:1082 (DPCLRKYKD FCIHGECKYVKELRAPSCICHPGYHGERCHGLSLP) was cloned into pSecTag and expressed and secreted as a Myc-His fusion protein.

2. Results

[000396]All of the U2-39; U2-42; U2-45; U2-26 and U2-19 antibody preparations recognize a discontinuous epitope. None of the antibodies recognize the Short form of the HB-EGF.

[000397]The binding site for all five antibody preparations is within the EGF-like domain, which included residues 44-86 of the mature protein having the following sequence: DPCLRKYKDFCIHGECKYVKELRAPSCICHPGYHGER CHGLSLP (SEQ ID NO:1082). The third disulfide bond in the EGF-like domain is required for binding of all of the U2-39; U2-42; U2-45; U2-26 and U2-19 antibody preparations.

3. Structure-Function Analysis of Antibody Binding Site by Site Directed Mutagenesis

[000398]Twelve independent mutations were created in HB-EGF by replacing one to four residues within the EGF-like domain of human pro-HB-EGF with the corresponding amino acid residue normally found in the mouse pro-HB-EGF.

[000399]Given that many of the present antibody preparations were species selective, site-directed mutagenesis for the purpose of identifying HB-EGF epitopes was done at known difference between the human HB-EGF protein and related proteins from different species. In particular, the amino acid differences between human and mouse HB-EGF are as follows: K122R; V124L; K125Q; I133K; and H135L.

[000400]A complete list of HB-EGF mutant polypeptide sequences for epitope mapping is provided in TABLE 10. Mutant HB-EGF nucleic acids encoding the desired mutant protein were transiently expressed in 293T cells, and monoclonal antibody binding was measured by ELISA.

[000401]Thus, HB-EGF mutant polypeptides were made with these mutations and such mutant polypeptides were tested to ascertain if the present antibody preparations still bound to the HB-EGF mutant polypeptide. If not, then the mutated amino acid was likely important for antibody binding, and hence formed an important part of an epitope.

[000402]TABLE 11 summarizes the binding results obtained, where "Yes" indicates that binding took place despite the indicated mutation, "No" indicates that binding was substantially eliminated by the indicated mutation, and "Reduced" indicates that reduced binding occurred when the mutation was present.

[000403]

[000404]TABLE 10

Wild type	LGKKRDPCLRKYKDFCIHGE- CKYVKELRAPSCICHPGYHGERCHGLSLP	SEQ ID NO:
F115Y	----------Y----------	1083
L127F	----------F----------	1084
E141H	----------H----------	1085
K122R; V124L; K125Q	----------R-LQ----------	1086
F115Y; K122R; V124L; K125Q	----------Y-----R-LQ----------	1087
K122R; V124L; K125Q; E141H	----------R-LQ----------H----------	1088
I133K; H135L	----------K-L----------	1089
F115Y; I133K; H135L	----------Y----------K-L----------	1090
L127F; I133K; H135L	----------F----K-L----------	1091
L148T	----------T-	1092
E141H; L148T	----------H-----T-	1093
117-120 IHGE changed to LHDGV	----------LHDGV----------	1094

TABLE 11
Binding Results

	Construct/ Mab	U2-42.3	U2-39.1	U2-19.3	U2-26.1	U2-45
1	Human proHB-EGF (WT)	Yes	Yes	Yes	Yes	Yes
2	F115Y	No	No	Yes	Yes	Reduced
3	L127F	Yes	No	Yes	Yes	Yes
4	E141H	No	Yes	Yes	Yes	Yes
5	K122R, V124L, K125Q	Yes	Yes	Yes	Yes	Yes
6	F115Y,K122R, V124L, K125Q	No	No	Yes	Yes	Reduced
7	K122R, V124L, K125Q, E141H	No	Yes	Yes	Yes	Yes
8	I133K, H135L	Yes	Yes	No	No	Yes
9	F115Y, I133K, H135L	No	No	No	No	Reduced
10	L127F,I133K, H135L,	Yes	No	No	No	Yes
11	S147T	Yes	Yes	Yes	Yes	Yes
12	E141H, S147T	No	Yes	Yes	Yes	Yes
13	IHGE (117-120) to LHDGV	Yes	Yes	No	No	No
	Critical residues	F115 & E141	F115 & L127	I133 or H135	I133 or H135	F115?

[000405]These binding studies indicate that the U2-42 and U2-39 antibody preparations recognize the diphtheria toxin binding domain and the F115, L127 and E141 residues are important for diphtheria toxin binding.

[000406]Furthermore, when the F115Y or E141H mutations are present in HB-EGF, binding is substantially eliminated for the U2-42 antibody preparations. Thus, Phe-115 and Glu-141 are important for U2-42 antibody binding. The U2-45 antibody preparation also appears to require Phe-115 because binding by this antibody preparation is reduced when Phe-115 is mutated.

[000407]The U2-39 antibody preparation requires Phe-115 and Leu-127 for binding HB-EGF because mutation of either of those residues substantially eliminates antibody binding.

[000408]The U2-19, U2-26 and U2-45 antibody preparations bind the conserved region between residues 117-120 (IHGE). As shown in TABLE 11, antibody preparations U2-19 and U2-26 also recognize an epitope at Ile-133 and/or His-135, because at least one of these residues is critical for their binding.

[000409]Based on their binding properties, of the antibodies were placed in the relationship "bins" listed in TABLE 12.

[000410]Binning is a method to group antibodies based on their competition for binding to the antigen (*see*, Jia *et al.*, 2004, *J. Immunol. Methods* 288:91-98).

[000411]The assignment of bins depended on how different the observed binding patterns for all the antibodies tested are. Therefore, bins do not always correlate with epitopes determined by other means and can be used to only roughly define epitopes.

[000412]

TABLE 12
Antibody Relationship Bins

Bin#1	Bin#2	Bin#3	Bin#4	Bin#5	Bin#6	Bin#7	Bin#8
U2-24.2	U2-1.3	U2-15.3	U2-13.3	U2-16.3	U2-18.3	U2-19.2	U2-3.2
U2-32.3		U2-30.2	U2-14.3		U2-38.1	U2-21.3	
U2-5.3			U2-2.1		1.19.2	U2-34.1	
U2-17.1			U2-57.1		U2-36.3	U2-26.2	
U2-56.3			U2-58.3		U2-40.3	U2-41.3	
			U2-61.1		U2-8.3	U2-45.3	
					U2-22.3	U2-46.3	
						U2-	
					U2-39.1	48.2.1	
					U2-54.2	U2-6.1	
						U2-51.2	
						U2-53.3	
						U2-28.2	

[000413]In general the epitope mapping of U2-45 antibody preparation indicates that the Bin 7 antibody preparations cross-react with mouse HB-EGF and human Amphiregulin.

[000414]Mutations of F115 to Ala or Tyr affect the binding affinity of U2-45 antibodies. However, U2-45 antibody binding was not affected by mutations of I133 and H135, which did affect some other Bin 7 antibody preparations. When the IHGE human HB-EGF sequence was changed to LHDGV, which is present in mouse HB-EGF and human Aphiregulin, all Bin7 antibody preparations failed to bind. Therefore, the IHGE residues (117-120) likely form the epitope for bin 7 antibody preparations.

[000415]Further site-directed mutagenesis studies involving binding of HB-EGF mutants to EGFR, indicate that residues including Asp-106 and Pro-107 are both necessary for optimal binding of HB-EGF to the EGF receptor. Moreover, Leu-148, which is necessary for HB-EGF

binding to the EGF receptor, did not appear to be involved in the binding of any of the anti-HB-EGF antibody preparations.

[000416]

HH.Example 24: Sequences Of Key Elements Of Anti HB-EGF Antibodies

[000417]This Example provides the sequences of antibody preparations in Figures 1 – 21.

[000418]Example 25A: Scratch assay - Inhibition of HB-EGF-induced migration of CLS354 epithelial squamous carcinoma cells (mouth)

Scratch experiments were performed in order to investigate whether the antibodies of the invention block cell migration that would otherwise be directly induced by HB-EGF.

[000419]1 x 10^6 CLS354 cells were seeded in medium (RPMI medium with 10% FCS) in 1 ml on a 12-well plate and serum starved (medium with 0.5% FCS) over night. After cells have reached a confluent layer, a scratch was performed in the middle of the well using a sterile plasic tip. Cells were washed with PBS and scratched CLS354 cells were treated alone or containing 20 ng/ml HB-EGF in the presence or absence of 10 µg/ml U2-39, Erbitux or human IgG. The experiment was stopped after 12 hour incubation at 37°C. Medium was withdrawn, cells were washed with PBS and fixed with 100% ice-cold methanol at -20°C, stained with crysal-violet, washed and dried over night. Photographes were taken for documentation.

[000420]Figure 40A shows that HB-EGF treatment stimulates the closure of the scratch and that the antibody of invention, U2-39, inhibits HB-EGF-mediated migration of CLS354 epithelial squamous carcinoma cells into the scratch.

[000421]Example 25B: Transmigration assay - Inhibition of HB-EGF-induced migration of Detroit 562 epithelial carcinoma cells (pharynx)

[000422]Transmigration experiments were performed in order to investigate whether the antibodies of the invention block cell migration that would otherwise be directly induced by HB-EGF.

[000423]A 500 ml cell suspension of serum-starved human epithelial carcinoma cells (50,000 cells) was placed in the top chamber of fibronectin-coated transwells (BD Falcon, 8 µm pores). Aliquots of 750 ml medium (Minimum essential medium (Eagle) in Earle's BSS with non-essential amino acids, sodium pyruvate (1 mM) and lactalbumin hydrolysate (0.1%), 90%; fetal bovine serum 10%, Pen.-Strept., 0,1% BSA) alone or containing 20 ng/ml HB-EGF (R&D Systems) in the presence or absence of 10 µg/ml human IgG, U2-39 or Erbitux antibodies were placed in the bottom chamber after 30 min pre-incubation at 37°C. After incubation and migration for 6hours at 37°C, cells were fixed, stained with DAPI and transwells were photographed for evaluation.

[000424]The result demonstrates that-HB-EGF antibody U2-39 effectively inhibits HB-EGF-induced Detroit 562 epithelial carcinoma cell migration comparable to the inhibition of HB-EGF-mediated cell migration by Erbitux treatment.

[000425]Example 26: Spheroid-based cellular angiogenesis assay – Inhibition of VEGF-stimulated endothelial cell sprouting

[000426]Spheroid-based cellular angiogenesis assays were performed in order to investigate whether the antibodies of the invention are able to inhibit VEGF-induced endothelial cell (EC) sprouting in a collagen matrix. Primary human umbilical vein endothelial cells (HUVEC) were seeded out at 500 cells in a hanging drop on plastic dishes to allow overnight spheroid aggregation. 50 EC spheroids were seeded in 0.9 ml of collagen solution (2 mg/ml) and pipetted into individual wells of a 24 well plate to allow polymerization The antibody of invention U2-39 was directly mixed in the collagen solution before polymerization (different concentrations) and the growth factor VEGF-A (25ng/ml) was added after 30 min by pipetting 100µl of a 10-fold concentrated working dilution on top of the polymerized gel. Plates were incubated at 37°C for 24 hours and fixed by adding 4% paraformaldehyde. Sprouting intensity of EC spheroids was quantitated by an image analysis system determining the cumulative sprout length per spheroid using an inverted microscope and the digital imaging software Analysis 3.2.

[000427]Figure 41A depicts the mean of the cumulative sprout length of 10 randomly selected spheroids per data point. Figure 41B shows the relative inhibition of the cumulative sprout length of 10 randomly selected spheroids per data point by U2-39. The fitting of IC50 curves and calculation of IC50 values was performed with GraphPad Prism 4.03.

[000428]The results of Example 26 demonstrate that the antibody of the invention U2-39 inhibits VEGF-A-stimulated human umbilical vein endothelial cell sprouting in a dose-dependent manner in the spheroid-based assay using a collagen matrix. HUVEC sprouting was inhibited with an IC50 value of 5.2×10^{-8} Molar.

[000429]Example 27: Immunohistochemistry (IHC) analysis of human tumor xenograft samples – Inhibition of CD31 staining of tumor *in vivo*.

[000430]In order to investigate the efficacy of the antibody of invention, U2-39, on inhibition of angiogenesis *in vivo*, human tumor xenografts treated with U2-39 or Erbitux were analyzed by immunohistochemistry analysis.

[000431]The human ovarian adenocarcinoma cell line EFO27 was genetically engineered to overexpress HB-EGF and the clone EFO27-CI58 was chosen for xenograft studies in SCID mice. 3 x 10^6 EFO27-CI58 cells in 100µl PBS/Matrigel (1:1) were injected subcutaneously into the left flank of 7 week old female C.B-17 SCID mice. Tumor-bearing mice with mean tumor volumes of 250 mm^3 were randomized into groups containing 10 animals. Animals were treated intraperitoneally with weekly doses of 25 mg/kg U2-39 or 25 mg/kg Erbitux or control vehicle, PBS, for 3 weeks. After 28 days mice were sacrificed, primary tumor tissues were collected and one half of the tumor was snap-frozen in liquid nitrogen and stored at -80°C.

[000432]5 to 8 µm sections of the tumor prepared on glass chamber slides were fixed in 100% acetone for 10 min at 4°C and dried completely. To block unspecific binding sites slides with fixed tumor sections were treated with Avidin D block (15 minutes), Biotin block (15 minutes) and a 1.25% BSA solution (1 hour). Between each treatment step slides were washed twice with PBS. For immunohistochemical examination of the tumor vasculature the expression of the classical endothelial cell marker CD31, also known as PECAM-1 (Platelet Endothelial Cell Adhesion Molecule-1) was analyzed by treatment of the slides with 2µg/ml anti-CD31 antibody (diluted in 1.25% BSA solution and incubated for 2h at room temperature in a humidified chamber). Detection was performed by applying a biotinylated goat ant-rat IgG antibody (30 min at room temperature) and Alexa 546 Streptavidin (15 min in the dark). PBS washing steps were performed between each treatment step. Sections were mounted with VECTASHIELD mounting medium with DAPI in the dark, photographed (fluorescence microscope) for documentation and stored at 4°C.

[000433]Figure 42 demonstrates that human tumor xenografts treated with U2-39 show a reduced endothelial cell marker staining (CD31 staining) compared to Erbitux-treated or control treated tumor xenografts. This result demonstrates the anti-angiogenic efficacy of the antibody of invention in vivo.

[000434]Example 28: In vivo ovarian tumor xenograft model – combination treatment of U2-39 with Cisplatin and Avastin

[000435]In order to evaluate the anti-tumor efficacy of the antibody of invention administered as a monotherapy or in combination with Cisplatin or Avastin, an ovarian cancer xenograft study was conducted.

[000436]The human ovarian adenocarcinoma cell line EFO27 was genetically engineered to overexpress HB-EGF. The clone EFO27-Cl58 was chosen for xenograft studies in SCID mice. 3 x 10^6 EFO27-Cl58 cells in 100µl PBS/Matrigel (1:1) were injected subcutaneously into the left flank of 7 week old female C.B-17 SCID mice. Tumor-bearing mice with mean tumor volumes between 75 and 175 mm^3 were randomized into groups containing 10 animals. Animals were treated intraperitoneally with weekly doses of 25 mg/kg U2-39, 25 mg/kg Avastin or 5 mg/kg Cisplatin or control vehicle, PBS. Combination of U2-39 with Avastin was given at 12.5 mg/kg each and combination of U2-39 with Cisplatin was given at 25 mg/kg antibody with 5 mg/kg Cisplatin. Primary tumor sizes were determined 3 times a week. Following calliper measurement, tumor size was calculated according to the formula W2xL/2 with L=length and W= the perpendicular width of the tumor. Kaplan-Meier log-rank method was used to define time to progression to 500 mm^3 (defined as "event" for statistical reasons).

[000437]Figure 43A demonstrates that combination of U2-39 with Cisplatin led to a stronger tumor reduction during the administration period than treatment with Cisplatin alone. In addition, a combination of U2-39 and Cisplatin delayed the time to progression of the median tumor size to 500 mm^3 compared to U2-39 monotherapy.

[000438]The result in Figure 43B shows that combination of U2-39 with Avastin significantly delayed the time to progression to 500 mm^3 tumor volumes compared to the treatment with Avastin as monotherapy although only half of the single agent dose was administered.

[000439]All patents and publications referenced or mentioned herein are indicative of the levels of skill of those skilled in the art to which the invention pertains, and each such referenced patent or publication is hereby incorporated by reference to the same extent as if it had been incorporated by reference in its entirety individually or set forth herein in its entirety. Applicants reserve the right to physically incorporate into this specification any and all materials and information from any such cited patents or publications.

[000440]The specific methods and compositions described herein are representative of preferred embodiments and are exemplary and not intended as limitations on the scope of the invention. Other objects, aspects, and embodiments will occur to those skilled in the art upon consideration of this specification, and are encompassed within the spirit of the invention as defined by the scope of the claims. It will be readily apparent to one skilled in the art that varying substitutions and modifications may be made to the invention disclosed herein without departing from the scope and spirit of the invention. The invention illustratively described herein suitably may be practiced in the absence of any element or elements, or limitation or limitations, which is not specifically disclosed herein as essential. The methods and processes illustratively described herein suitably may be practiced in differing orders of steps, and they are not

necessarily restricted to the orders of steps indicated herein or in the claims. As used herein and in the appended claims, the singular forms "a," "an," and "the" include plural reference unless the context clearly dictates otherwise. Thus, for example, a reference to "an antibody" includes a plurality (for example, a solution of antibodies or a series of antibody preparations) of such antibodies, and so forth. Under no circumstances may the patent be interpreted to be limited to the specific examples or embodiments or methods specifically disclosed herein. Under no circumstances may the patent be interpreted to be limited by any statement made by any Examiner or any other official or employee of the Patent and Trademark Office unless such statement is specifically and without qualification or reservation expressly adopted in a responsive writing by Applicants.

[000441]The terms and expressions that have been employed are used as terms of description and not of limitation, and there is no intent in the use of such terms and expressions to exclude any equivalent of the features shown and described or portions thereof, but it is recognized that various modifications are possible within the scope of the invention as claimed. Thus, it will be understood that although the present invention has been specifically disclosed by preferred embodiments and optional features, modification and variation of the concepts herein disclosed may be resorted to by those skilled in the art, and such modifications and variations are considered to be within the scope of this invention as defined by the appended claims.

[000442]The invention has been described broadly and generically herein. Each of the narrower species and subgeneric groupings falling within the generic disclosure also form part of the invention. This includes the generic description of the invention with a proviso or negative limitation removing any subject matter from the genus, regardless of whether or not the excised material is specifically recited herein.

Claims

1. An isolated antigen binding protein that binds HB-EGF, comprising:

A) one or more light chain complementary determining regions (CDRLs) selected from the group consisting of:

(i) a CDRL1 selected from the group consisting of SEQ ID NOs:189-217;

(ii) a CDRL2 selected from the group consisting of SEQ ID NOs:218-233;

(iii) a CDRL3 selected from the group consisting of SEQ ID NOs:234-274; and

(iv) a CDRL of (i), (ii) or (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than four amino acids; or

B) one or more heavy chain complementary determining regions (CDRHs) selected from the group consisting of:

(i) a CDRH1 selected from the group consisting of SEQ ID NOs:275-299;

(ii) a CDRH2 selected from the group consisting of SEQ ID NOs:300-331;

(iii) a CDRH3 selected from the group consisting of SEQ ID NOs:332-372; and

(iv) a CDRH of (i), (ii) or (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than four amino acids.

2. The isolated antigen binding protein of Claim 1, comprising one or more light chain CDRLs of A), and one or more heavy chain CDRHs of B).

3. The isolated antigen binding protein of Claim 1 that comprises at least two CDRLs of A) and at least two CDRHs of B).

4. The isolated antigen binding protein of Claim 1 that comprises said CDRH1, CDRH2, CDRH3, CDRL1, CDRL2 and CDRL3.

5. The isolated antigen binding protein of Claim 1, wherein

said CDRL of A) is selected from the group consisting of:

(i) a CDRL1 selected from the group consisting of SEQ ID NOs:189-217;

(ii) a CDRL2 selected from the group consisting of SEQ ID NOs:218-233;

(iii) a CDRL3 selected from the group consisting of SEQ ID NOs:234-274; and

(iv) a CDRL of (i), (ii) or (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than two amino acids;

said CDRH of B) is selected from the group consisting of:

(i) a CDRH1 selected from the group consisting of SEQ ID NOs:275-299;

(ii) a CDRH2 selected from the group consisting of SEQ ID NOs:300-331;

(iii) a CDRH3 selected from the group consisting of SEQ ID NOs:332-372; and

(iv) a CDRH of (i), (ii) or (iii) that contains one or more amino acid substitutions, deletions or insertions of no more than two amino acids;

or

C) one or more light chain CDRLs of A) and one or more heavy chain CDRHs of B).

6. The isolated antigen binding protein of Claims 1, wherein said antigen binding protein comprises

A) a CDRL selected from the group consisting of

(i) a CDRL1 selected from the group consisting of SEQ ID NOs:189-217;

(ii) a CDRL2 selected from the group consisting of SEQ ID NOs:218-233; and

(iii) a CDRL3 selected from the group consisting of SEQ ID NOs:234-274;

B) a CDRH selected from the group consisting of

(i) a CDRH1 selected from the group consisting of SEQ ID NOs:275-299;

(ii) a CDRH2 selected from the group consisting of SEQ ID NOs:300-331;and

(iii) a CDRH3 selected from the group consisting of SEQ ID NOs:332-372;

or

C) one or more light chain CDRLs of A) and one or more heavy chain CDRHs of B).

7. The isolated antigen binding protein of Claims 6, wherein said antigen binding protein comprises

A) a CDRL1 of SEQ ID NOs:189-217, a CDRL2 of SEQ ID NOs:218-233, and a CDRL3 of SEQ ID NOs:234-274, and/or

B) a CDRH1 of SEQ ID NOs:275-299, a CDRH2 of SEQ ID NOs:300-331, and a CDRH3 of SEQ ID NOs:332-372.

8. The isolated antigen binding protein of Claim 1, wherein said antigen binding protein comprises a light chain variable region (V_L) having at least 80% sequence identity with an amino acid sequence selected from the group consisting of SEQ ID NOs:94-141, and/or a heavy chain variable region (V_H) having at least 80% sequence identity with an amino acid sequence selected from the group consisting of SEQ ID NOs:142-186.

9. The isolated antigen binding protein of Claim 8, wherein the V_L has at least 90% sequence identity with an amino acid sequence selected from the group consisting of SEQ ID NOs:94-141, and/or the V_H has at least 90% sequence identity with an amino acid sequence selected from the group consisting of SEQ ID NOs:142-186.

10. The isolated antigen binding protein of Claim 8, wherein the V_L is selected from the group consisting of SEQ ID NOs:94-141, and/or the V_H is selected from the group consisting of SEQ ID NOs:142-186.

11. An isolated antigen binding protein that specifically recognizes at least an IHGE-containing epitope and/or an EGF-like domain of HB-EGF.

12. An isolated antigen binding protein that competes for binding with the antigen binding protein of Claims 1.

13. An isolated antigen binding protein that binds HB-EGF, wherein said antigen binding protein comprises:

A) one or more light chain CDRs (CDRLs) selected from the group consisting of:

(i) a CDRL1 with at least 80% sequence identity to SEQ ID NOs:189-217;

(ii) a CDRL2 with at least 80% sequence identity to SEQ ID NOs:218-233; and

(iii) a CDRL3 with at least 80% sequence identity to SEQ ID NOs:234-274;

B) one or more heavy chain CDRs (CDRHs) selected from the group consisting of:

(i) a CDRH1 with at least 80% sequence identity to SEQ ID NOs:275-299;

(ii) a CDRH2 with at least 80% sequence identity to SEQ ID NOs:300-331; and

(iii) a CDRH3 with at least 80% sequence identity to SEQ ID NOs:332-372;

or

C) one or more light chain CDRLs of A) and one or more heavy chain CDRHs of B).

14. The isolated antigen binding protein of Claims 13, wherein said antigen binding protein comprises:

A) one or more CDRLs selected from the group consisting of:

(i) a CDRL1 with at least 90% sequence identity to SEQ ID NOs:189-217;

(ii) a CDRL2 with at least 90% sequence identity to SEQ ID NOs:218-233; and

(iii) a CDRL3 with at least 90% sequence identity to SEQ ID NOs:234-274;

B) one or more CDRHs selected from the group consisting of:

(i) a CDRH1 with at least 90% sequence identity to SEQ ID NOs:275-299;

(ii) a CDRH2 with at least 90% sequence identity to SEQ ID NOs:300-331; and

(iii) a CDRH3 with at least 90% sequence identity to SEQ ID NOs:332-372;

or

C) one or more light chain CDRLs of A) and one or more heavy chain CDRHs of B).

15. An isolated antigen binding protein that binds HB-EGF, the antigen binding protein comprising:

A) a light chain complementary determining region (CDRL) selected from the group consisting of

(i) a CDRL3 selected from the group consisting of SEQ ID NOs:234-274,

(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

$X_1QX_2X_3X_4X_5PX_6X_7$ (SEQ ID NO:1046), wherein

X_1 is selected from the group consisting of I and M,

X_2 is selected from the group consisting of A, G and S,

X_3 is selected from the group consisting of I and T,

X_4 is selected from the group consisting of H and Q,

X_5 is selected from the group consisting of F, L and W,

$7X_6$ is selected from the group consisting of C, I, H, L and T,

X_7 is selected from the group consisting of S and T;

$QQX_1X_2X_3X_4X_5IT$ (SEQ ID NO:1047), wherein

X_1 is selected from the group consisting of I and S,

X_2 is selected from the group consisting of F and Y,

X_3 is selected from the group consisting of F, I, S and Y,

X_4 is selected from the group consisting of A, S and T,

X_5 is selected from the group consisting of P and S;

$X_1X_2X_3X_4X_5X_6X_7X_8T$ (SEQ ID NO:1048), wherein

X_1 is selected from the group consisting of L and Q,

X_2 is selected from the group consisting of K, N and Q,

X_3 is selected from the group consisting of A, H, S and Y,

X_4 is selected from the group consisting of H, N and Y,

X_5 is selected from the group consisting of N, S and T,

X_6 is selected from the group consisting of A, F, I, T, V and Y,

X_7 is selected from the group consisting of P and no amino acid,

X_8 is selected from the group consisting of F, L and P;

$QX_1X_2DX_3LPX_4X_5$ (SEQ ID NO:1049), wherein

X_1 is selected from the group consisting of H and Q,

X_2 is selected from the group consisting of C and Y,

X_3 is selected from the group consisting of D, I, N, S and Y,

X_4 is selected from the group consisting of F, I and L,

X_5 is selected from the group consisting of A, S and T;

$QQX_1X_2X_3X_4PX_5X_6X_7$ (SEQ ID NO:1050), wherein

X_1 is selected from the group consisting of H and Y,

X_2 is selected from the group consisting of G and N,

X_3 is selected from the group consisting of N and S,

X_4 is selected from the group consisting of S and W,

X_5 is selected from the group consisting of P and no amino acid,

X_6 is selected from the group consisting of R and W,

X_7 is selected from the group consisting of S and T; and

$X_1QYX_2X_3X_4X_5X_6X_7F$ (SEQ ID NO:1051), wherein

X_1 is selected from the group consisting of H and Q,

X_2 is selected from the group consisting of F and Y,

X_3 is selected from the group consisting of G, I and S,

X_4 is selected from the group consisting of F, I and T,

X_5 is selected from the group consisting of M, P, S and T,

X_6 is selected from the group consisting of F, L, R and W,

X_7 is selected from the group consisting of S and T; and/or

B) a heavy chain complementary determining region (CDRH) selected from the group consisting of

(i) a CDRH3 selected from the group consisting of SEQ ID NOs:332-372,

(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

$X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}DX_{12}$ (SEQ ID NO:1065), wherein

X_1 is selected from the group consisting of E and S,

X_2 is selected from the group consisting of D, G and no amino acid,

X_3 is selected from the group consisting of D, N and no amino acid,

X_4 is selected from the group consisting of G and no amino acid,

X_5 is selected from the group consisting of G and no amino acid,

X_6 is selected from the group consisting of W, Y and no amino acid,

X_7 is selected from the group consisting of I, N and Y,

X_8 is selected from the group consisting of A and Y,

X_9 is selected from the group consisting of G, V and Y,

X_{10} is selected from the group consisting of A, F and G,

X_{11} is selected from the group consisting of F, L and M,

X_{12} is selected from the group consisting of V and Y;

$QX_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}YX_{12}X_{13}X_{14}DX_{15}$ (SEQ ID NO:1066), wherein

X_1 is selected from the group consisting of G and no amino acid,

X_2 is selected from the group consisting of K, L and Y,

X_3 is selected from the group consisting of A, G and S,

X_4 is selected from the group consisting of S, V and Y,

X_5 is selected from the group consisting of A and G,

X_6 is selected from the group consisting of G and no amino acid,

X_7 is selected from the group consisting of T and no amino acid,

X_8 is selected from the group consisting of S and no amino acid,

X_9 is selected from the group consisting of Y and no amino acid,

X_{10} is selected from the group consisting of W and Y,

X_{11} is selected from the group consisting of G, S and Y,

X_{12} is selected from the group consisting of F and Y,

X_{13} is selected from the group consisting of G and no amino acid,

X_{14} is selected from the group consisting of M and no amino acid,

X_{15} is selected from the group consisting of V and Y;

$X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}$ (SEQ ID NO:1067), wherein

X_1 is selected from the group consisting of D, G, L, S and no amino acid,

X_2 is selected from the group consisting of G, H, W, Y and no amino acid;

X_3 is selected from the group consisting of A, F, W, Y and no amino acid,

X_4 is selected from the group consisting of D, G, Q, T and no amino acid,

X_5 is selected from the group consisting of G, I, Q, S and no amino acid,

X_6 is selected from the group consisting of A, D, N, Q, S and no amino acid,

X_7 is selected from the group consisting of G, Y and no amino acid,

X_8 is selected from the group consisting of D, Y and no amino acid,

X_9 is selected from the group consisting of Y and no amino acid,

X_{10} is selected from the group consisting of A, E, N and Y,

X_{11} is selected from the group consisting of G, P, T, V and Y,

X_{12} is selected from the group consisting of F and I,

X_{13} is selected from the group consisting of D and Q,

X_{14} is selected from the group consisting of C, H, V and Y;

$X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}X_{16}X_{17}DX_{18}$ (SEQ ID NO:1068), wherein

X_1 is selected from the group consisting of E, D and no amino acid,

X_2 is selected from the group consisting of G, R and no amino acid,

X_3 is selected from the group consisting of I, V, Y and no amino acid,

X_4 is selected from the group consisting of A, G, L and N,

X_5 is selected from the group consisting of A, G, V and W,

X_6 is selected from the group consisting of A, N, R and T,

X_7 is selected from the group consisting of G, N, P and no amino acid,

X_8 is selected from the group consisting of G, T and no amino acid,

X_9 is selected from the group consisting of A and no amino acid,

X_{10} is selected from the group consisting of D, E and no amino acid,

X_{11} is selected from the group consisting of S, Y and no amino acid,

X_{12} is selected from the group consisting of G, Y and no amino acid,

X_{13} is selected from the group consisting of N, Y and no amino acid,

X_{14} is selected from the group consisting of Y and no amino acid,

X_{15} is selected from the group consisting of D, Y and no amino acid,

X_{16} is selected from the group consisting of A, G and no amino acid,

X_{17} is selected from the group consisting of F and M,

X_{18} is selected from the group consisting of I, V and Y;

$X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}X_{16}X_{17}X_{18}X_{19}X_{20}X_{21}X_{22}X_{23}$ (SEQ ID NO:1069), wherein

X_1 is selected from the group consisting of A, D, G, S and T,

X_2 is selected from the group consisting of A, E, G, L, N, R, Y and no amino acid,

X_3 is selected from the group consisting of A, G, L, N, R, T, Y and no amino acid,

X_4 is selected from the group consisting of D, G, R, S, V, Y and no amino acid,

X_5 is selected from the group consisting of A, G, I, S, V, Y and no amino acid,

X_6 is selected from the group consisting of F, G, L, R, V and no amino acid,

X_7 is selected from the group consisting of L, T, Y and no amino acid,

X_8 is selected from the group consisting of Y and no amino acid,

X_9 is selected from the group consisting of Y and no amino acid,

X_{10} is selected from the group consisting of D and no amino acid,

X_{11} is selected from the group consisting of S and no amino acid,

X_{12} is selected from the group consisting of S and no amino acid,

X_{13} is selected from the group consisting of G and no amino acid,

X_{14} is selected from the group consisting of D, L, M, S, Y and no amino acid,

X_{15} is selected from the group consisting of H, I, P, V, W and no amino acid,

X_{16} is selected from the group consisting of F, G, L, R, S, Y and no amino acid,

X_{17} is selected from the group consisting of D, F, V, W, Y and no amino acid,

X_{18} is selected from the group consisting of C, F, L, P, S and Y,

X_{19} is selected from the group consisting of D, F, G and Y,

X_{20} is selected from the group consisting of A, C, G, P, R, V and Y,

X_{21} is selected from the group consisting of F, L, M, S and no amino acid,

X_{22} is selected from the group consisting of A, D and no amino acid,

X_{23} is selected from the group consisting of I, L, V, Y and no amino acid;

$X_1YSSGWX_2X_3YGX_4X_5DX_6$ (SEQ ID NO:1070), wherein

X_1 is selected from the group consisting of M and V,

X_2 is selected from the group consisting of S and no amino acid,

X_3 is selected from the group consisting of F and no amino acid,

X_4 is selected from the group consisting of V and no amino acid,

X_5 is selected from the group consisting of F and M,

X_6 is selected from the group consisting of V and Y; and

$RX_1X_2X_3PFX_4Y$ (SEQ ID NO:1071), wherein

X_1 is selected from the group consisting of G, H, L, N and R,

X_2 is selected from the group consisting of E, T and W,

X_3 is selected from the group consisting of L, N, T and V,

X_4 is selected from the group consisting of D and E.

16. The isolated antigen binding protein of Claim 15, said antigen binding protein further comprising:

A) a CDRL selected from the group consisting of:

(i) a CDRL1 selected from the group consisting of SEQ ID NOs:189-217;

(ii) a CDRL1 that differs in amino acid sequence from the CDRL1 of (i) by an amino acid addition, deletion or substitution of not more than two amino acids;

(iii) a CDRL1 amino acid sequence selected from the group consisting of

$X_1SSQSLX_2X_3SDGX_4TYLX_5$ (SEQ ID NO:1035), wherein

X_1 is selected from the group consisting of K and R,

X_2 is selected from the group consisting of L and V,

X_3 is selected from the group consisting of H and Y,

X_4 is selected from the group consisting of K and N,

X_5 is selected from the group consisting of N, S and Y;

$RASQX_1ISX_2YLN$ (SEQ ID NO:1036), wherein

X_1 is selected from the group consisting of R, S and T,

X_2 is selected from the group consisting of R and S;

$RASQX_1IX_2X_3X_4LX_5$ (SEQ ID NO:1037), wherein

X_1 is selected from the group consisting of D, G, S and T,

X_2 is selected from the group consisting of A, R and S,

X_3 is selected from the group consisting of H, I, N, R, S and T,

X_4 is selected from the group consisting of D, W and Y,

X_5 is selected from the group consisting of A, G and N;

$QASQDIX_1X_2X_3LN$ (SEQ ID NO:1038), wherein

X_1 is selected from the group consisting of S and T,

X_2 is selected from the group consisting of D and N,

X_3 is selected from the group consisting of S and Y;

$RASQX_1VX_2X_3X_4X_5LA$ (SEQ ID NO:1039), wherein

X_1 is selected from the group consisting of S and T,

X_2 is selected from the group consisting of I and S,

X_3 is selected from the group consisting of R and S,

X_4 is selected from the group consisting of S, N and no amino acid,

X_5 is selected from the group consisting of Y and no amino acid; and

$KSSQX_1X_2LX_3X_4SNNKNYLX_5$ (SEQ ID NO:1040), wherein

X_1 is selected from the group consisting of N and S,

X_2 is selected from the group consisting of I and V,

X_3 is selected from the group consisting of D and Y,

X_4 is selected from the group consisting of N, R and S,

X_5 is selected from the group consisting of A and V;

(iv) a CDRL2 selected from the group consisting of SEQ ID NOs:218-233;

(v) a CDRL2 that differs in amino acid sequence from the CDRL2 of (iv) by an amino acid addition, deletion or substitution of not more than two amino acids; and

(vi) a CDRL2 amino acid sequence selected from the group consisting of

$X_1X_2SNX_3X_4S$ (SEQ ID NO:1041), wherein

X_1 is selected from the group consisting of E and K,

X_2 is selected from the group consisting of I and V,

X_3 is selected from the group consisting of R and W,

X_4 is selected from the group consisting of D and F;

$X_1X_2SX_3LQS$ (SEQ ID NO:1042), wherein

X_1 is selected from the group consisting of A and T,

X_2 is selected from the group consisting of A, E and V,

X_3 is selected from the group consisting of S and T;

X_1ASX_2LQS (SEQ ID NO:1043), wherein

X_1 is selected from the group consisting of A and V,

X_2 is selected from the group consisting of S and T;

$DASX_1LET$ (SEQ ID NO:1044), wherein

X_1 is selected from the group consisting of I and N;

GASSRAT (SEQ ID NO:223); and

$WASX_1RES$ (SEQ ID NO:1045), wherein

X_1 is selected from the group consisting of A and T; or

B) a CDRH selected from the group consisting of:

(i) a CDRH1 selected from the group consisting of SEQ ID NOs:275-299;

(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;

(iii) a CDRH1 amino acid sequence selected from the group consisting of

$GYTX_1TX_2X_3X_4X_5X_6$ (SEQ ID NO:1052), wherein

X_1 is selected from the group consisting of F and L,

X_2 is selected from the group consisting of E, G and S,

X_3 is selected from the group consisting of H, L and Y,

X_4 is selected from the group consisting of G, S and Y,

X_5 is selected from the group consisting of I and M,

X_6 is selected from the group consisting of H and S;

$GYX_1FTSYWIG$ (SEQ ID NO:1053), wherein

X_1 is selected from the group consisting of R and S;

$GFTFX_1SX_2X_3MH$ (SEQ ID NO:1054), wherein

X_1 is selected from the group consisting of R and S,

X_2 is selected from the group consisting of H and Y,

X_3 is selected from the group consisting of D and G;

$GFX_1FSX_2YX_3MX_4$ (SEQ ID NO:1055), wherein

X_1 is selected from the group consisting of P and T,

X_2 is selected from the group consisting of A, R and S,

X_3 is selected from the group consisting of A and S,

X_4 is selected from the group consisting of N and S;

$GX_1SX_2SX_3X_4X_5X_6X_7WX_8$ (SEQ ID NO:1056), wherein

X_1 is selected from the group consisting of D and G,

X_2 is selected from the group consisting of F, I and V,

X_3 is selected from the group consisting of R, S and no amino acid,

X_4 is selected from the group consisting of G, Y and no amino acid,

X_5 is selected from the group consisting of D, G, S and no amino acid,

X_6 is selected from the group consisting of A, S and Y,

X_7 is selected from the group consisting of A and Y,

X_8 is selected from the group consisting of N and S;

GFSLSNARMGVS (SEQ ID NO:279); and

$GFSLX_1TGGVGVG$ (SEQ ID NO:1057), wherein

X_1 is selected from the group consisting of S and N;

(iv) a CDRH2 selected from the group consisting of SEQ ID NOs:300-331;

(v) a CDRH2 that differs in amino acid sequence from the CDRH2 of (iv) by an amino acid addition, deletion or substitution of not more than two amino acids; and

(vi) a CDRH2 amino acid sequence selected from the group consisting of

$X_1X_2X_3X_4X_5X_6GX_7TX_8X_9X_{10}QKX_{11}X_{12}$ (SEQ ID NO:1058), wherein

X_1 is selected from the group consisting of S and W,

X_2 is selected from the group consisting of F and I,

X_3 is selected from the group consisting of D, N and S,

X_4 is selected from the group consisting of A and P,

X_5 is selected from the group consisting of E, N and S,

X_6 is selected from the group consisting of D, N and S,

X_7 is selected from the group consisting of E, G and N,

X_8 is selected from the group consisting of I and N,

X_9 is selected from the group consisting of C, H and Y,

X_{10} is selected from the group consisting of A and T,

X_{11} is selected from the group consisting of F and L,

X_{12} is selected from the group consisting of D and G;

IIYPX_1DSDX_2RYSPSFQG (SEQ ID NO:1059), wherein

X_1 is selected from the group consisting of D and G,

X_2 is selected from the group consisting of A, I and T;

$X_1IX_2X_3$DGS$X_4X_5X_6$YX_7DSVX_8G (SEQ ID NO:1060), wherein

X_1 is selected from the group consisting of F and V,

X_2 is selected from the group consisting of S and W,

X_3 is selected from the group consisting of D, S and Y,

X_4 is selected from the group consisting of I, N and T,

X_5 is selected from the group consisting of K and Q,

X_6 is selected from the group consisting of N, R and Y,

X_7 is selected from the group consisting of A, T and V,

X_8 is selected from the group consisting of K and R;

X_1ISX_2S$X_3X_4X_5X_6$YYADSVKG (SEQ ID NO:1061), wherein

X_1 is selected from the group consisting of A, H and Y,

X_2 is selected from the group consisting of G, R and S,

X_3 is selected from the group consisting of G and S,

X_4 is selected from the group consisting of G, R and S,

X_5 is selected from the group consisting of S, T and Y,

X_6 is selected from the group consisting of I and T;

$X_1X_2X_3X_4X_5X_6X_7X_8X_9X_{10}X_{11}YX_{12}X_{13}SX_{14}$KS (SEQ ID NO:1062), wherein

X_1 is selected from the group consisting of E, R and Y,

X_2 is selected from the group consisting of I and T,

X_3 is selected from the group consisting of H, N and Y,

X_4 is selected from the group consisting of C, H, S, T and Y,

X_5 is selected from the group consisting of S and R,

X_6 is selected from the group consisting of G and S,

X_7 is selected from the group consisting of G, K, S and T,

X_8 is selected from the group consisting of T and W,

X_9 is selected from the group consisting of N and Y,

X_{10} is selected from the group consisting of N and no amino acid,

X_{11} is selected from the group consisting of D and no amino acid,

X_{12} is selected from the group consisting of A and N,

X_{13} is selected from the group consisting of P and V,

X_{14} is selected from the group consisting of L and V;

X_1IFSNDEKSYSTSLKS (SEQ ID NO:1063), wherein

X_1 is selected from the group consisting of H and LI; and

LIYWNX_1X_2KRYSPSLX_3S (SEQ ID NO:1064), wherein

X_1 is selected from the group consisting of D and V,

X_2 is selected from the group consisting of D and E,

X_3 is selected from the group consisting of K and R.

17. The isolated antigen binding protein of Claim 16, wherein said antigen binding protein comprises said first amino acid sequence and said second amino acid sequence.

18. The isolated antigen binding protein of Claim 17, wherein said first amino acid sequence is covalently bonded to said second amino acid sequence.

19. The isolated antigen binding protein of Claim 17, wherein said first amino acid sequence comprises said CDRL3 of SEQ ID NOs:234-274, CDRL2 of SEQ ID NOs:218-233, and CDRL1 of SEQ ID NOs: 189-217, and said second amino acid sequence comprises said CDRH3 of SEQ ID NOs:332-372, CDRH2 of SEQ ID NOs:300-331, and CDRH1 of SEQ ID NOs:275-299.

20. The isolated antigen binding protein of any of Claim 1-19, wherein said 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.

21. The isolated antigen binding protein of Claim 20, wherein said antibody fragment is a Fab fragment, a Fab' fragment, a $F(ab')_2$ fragment, a Fv fragment, a diabody, or a single chain antibody molecule.

22. The isolated antigen binding protein of Claim 20, wherein said antigen binding protein is a human antibody.

23. The isolated antigen binding protein of Claim 20, wherein said antigen binding protein is a monoclonal antibody.

24. The isolated antigen binding protein of any of Claims 1-19 wherein said antigen binding protein is of the IgG1-, IgG2- IgG3- or IgG4-type.

25. The isolated antigen binding protein of Claim 24, wherein said antigen binding protein is of the IgG2- or IgG4-type.

26. The isolated antigen binding protein of any of Claims 1-19, wherein said antigen binding protein is coupled to a labeling group.

27. The isolate antigen binding protein of Claim 26, wherein the labeling group is a radioisotope, radionuclide, a fluorescent group, an enzymatic group, a chemiluminescent group, a biotinyl group, or a predetermined polypeptide group.

28. The isolated antigen binding protein of any of Claims 1-19, wherein said antigen binding protein is coupled to an effector group.

29. The isolated antigen binding protein of Claim 28, wherein said effector group is a radioisotope, a radionuclide, a toxin, a therapeutic group, or a chemotherapeutic group.

30. The isolated antigen binding protein of Claim 29, wherein said therapeutic group or chemotherapeutic group is calicheamicin, auristatin-PE, geldanamycin, maytanasine, or derivatives thereof.

31. An isolated antigen binding protein that competes for binding to human HB-EGF with an antigen binding protein of one of Claims 1-19.

32. The isolated antigen binding protein of Claim 31, wherein said 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.

33. The isolated antigen binding protein of Claim 32, wherein said antibody fragment is a Fab fragment, a Fab' fragment, a $F(ab')_2$ fragment, a Fv fragment, a diabody, or a single chain antibody molecule.

34. The isolated antigen binding protein of Claim 32, wherein said antigen binding protein is a human antibody.

35. The isolated antigen binding protein of Claim 32, wherein said antigen binding protein is a monoclonal antibody.

36. The isolated antigen binding protein of any of Claim 31, wherein said antigen binding protein is of the IgG1-, IgG2- IgG3- or IgG4-type.

37. The isolated antigen binding protein of Claim 36, wherein said antigen binding protein is of the IgG2- or the IgG4-type.

38. The isolated antigen binding protein of any of Claim 31, wherein said antigen binding protein is coupled to a labeling group.

39. The isolate antigen binding protein of Claim 38, wherein the labeling group is a radioisotope, radionuclide, a fluorescent group, an enzymatic group, a chemiluminescent group, a biotinyl group, or a predetermined polypeptide group.

40. The isolated antigen binding protein of Claim 31, wherein said antigen binding protein is coupled to an effector group.

41. The isolated antigen binding protein of Claim 40, wherein said effector group is a radioisotope, a radionuclide, a toxin, a therapeutic group, or a chemotherapeutic group.

42. The isolated antigen binding protein of Claim 41, wherein said therapeutic group or chemotherapeutic group is calicheamicin, auristatin-PE, geldanamycin, maytanasine, or derivatives thereof.

43. The isolated antigen binding protein of one of Claims 1-19, wherein said antigen binding protein reduces at least partially HB-EGF-mediated signal transduction..

44. A nucleic acid molecule encoding the antigen binding protein according to any one of Claims 1-19.

45. The nucleic acid molecule according to Claim 44, wherein said nucleic acid molecule is operably linked to a control sequence.

46. A vector comprising a nucleic acid molecule according to Claim 44.

47. A vector comprising a nucleic acid molecule according to Claim 45.

48. A host cell comprising the nucleic acid molecule according to Claim 45.

49. A host cell comprising the vector according to one of Claim 46 or 47.

50. A method of making the antigen binding protein according to any one of Claims 1-19, comprising the step of preparing said antigen binding protein from a host cell that secretes said antigen binding protein.

51. A pharmaceutical composition comprising at least one antigen binding protein according to any one of Claims 1-19, and pharmaceutically acceptable carrier, diluents and/or adjuvants.

52. The pharmaceutical composition of Claim 51, further comprises an additional active agent.

53. The pharmaceutical composition according to Claim 52, wherein the at least one further active agent is an anti-neoplastic agent.

54. The pharmaceutical composition of Claim 53, wherein the anti-neoplastic agent is an anti-tumor antibody.

55. The pharmaceutical composition of Claim 54, wherein the anti-tumor antibody is an antibody directed against a receptor tyrosine kinase.

56. The pharmaceutical composition of Claim 53, wherein the anti-tumor antibody is directed against EGFR.

57. The pharmaceutical composition of Claim 51, for the diagnosis, prevention or treatment of a hyperproliferative disease.

58. The pharmaceutical composition to Claim 57, wherein said hyperproliferative disease is associated with HB-EGF expression.

59. The pharmaceutical composition according to Claim 57, wherein said hyperproliferative disease is associated with or accompanied by a disturbed, *e.g.*,pathologically enhanced growth factor receptor activation.

60. The pharmaceutical composition of Claim 59, wherein said pathologically enhanced growth factor receptor activation is associated with or caused by a pathological increase in the activity of a G protein and/or a G protein coupled receptor.

61. The pharmaceutical composition of Claim 51 for the diagnosis, prevention or treatment of cancer.

62. The pharmaceutical composition Claim 61, wherein said cancer is selected from the group consisting of breast cancer, gastrointestinal cancer, pancreas cancer, prostate cancer, ovarian cancer, stomach cancer, endometrial cancer, salivary gland cancer, lung cancer, kidney cancer, colon cancer, colorectal cancer, thyroid cancer, bladder cancer, glioma, melanoma, carcinoma, in particular epithelial or squamous carcinoma, other HB-EGF expressing or overexpressing cancers, and formation of tumor metastases.

63. Use of at least one antigen binding protein of Claims 1-19, for the manufacture of a pharmaceutical composition for the diagnosis, prevention or treatment of a hyperproliferative disease.

64. The use according to Claim 63, wherein said hyperproliferative disease is a hyperproliferative disease as defined in Claim 58.

65. A method for diagnosing a condition associated with the expression of HB-EGF, comprising contacting a sample with an antigen binding protein of Claims 1-19, and determining the presence of HB-EGF in said sample.

66. The method according to Claim 65, wherein the condition is a hyperproliferative disease as defined in Claim 58.

67. A method for preventing or treating a condition associated with the expression of HB-EGF in a patient, comprising administering to a patient in need thereof an effective amount of at least one antigen binding protein of Claims 1-19.

68. The method according to Claim 62, wherein the condition is a hyperproliferative disease as defined in any one of Claims 57-60.

69. The method of Claim 57, wherein the patient is a mammalian patient.

70. A kit comprising a antigen binding protein of Claims 1-19, a nucleic acid molecule of Claim 44 or 45 or a vector according to Claim 46 or 47.

71. The kit of Claim 70 comprising at least one further active agent.

72. The kit of Claim 71, wherein the further active agent is an anti-neoplastic agent.

73. The pharmaceutical composition according to claim 53, wherein the the anti-neoplastic agent id Cisplatin or Avastin.

74. The pharmaceutical composition according to any of the claims 51 to 62 which is to be administered as a monotherapy or in combination with a further pharmaceutical composition preferably comprising an anti-neoplastic agent such as cisplatin or Avastin.

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Asp Gly Asn Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser
        35                  40                  45


Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Asp 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 Ile Gln Gly
                85                  90                  95


Thr His Trp Pro Thr Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105                 110


Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
        115                 120                 125


Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
    130                 135                 140


Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145                 150                 155                 160


Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
                165                 170                 175


Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
            180                 185                 190


Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
        195                 200                 205
```

```
Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215


<210>  3
<211>  219
<212>  PRT
<213>  Homo Sapiens

<400>  3

Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1               5                   10                  15


Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Ser
            20                  25                  30


Asp Gly Asn Thr Tyr Leu Asn Trp Leu Gln Gln Arg Pro Gly Gln Ser
        35                  40                  45


Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Asp 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 Gly
                85                  90                  95


Thr His Trp Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105                 110


Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
        115                 120                 125


Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
    130                 135                 140


Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145                 150                 155                 160


Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
                165                 170                 175


Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
            180                 185                 190


Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
        195                 200                 205


Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215
```

<210> 4
<211> 219
<212> PRT
<213> Homo Sapiens

<400> 4

```
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly
1               5                  10                  15

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu His Ser
            20                  25                  30

Asp Gly Lys Thr Tyr Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Pro
        35                  40                  45

Pro Gln Leu Leu Ile Tyr Glu Val Ser Asn Arg Phe 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 Gly
                85                  90                  95

Ile Gln Leu Pro Cys Ser Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
            100                 105                 110

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
        115                 120                 125

Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
    130                 135                 140

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145                 150                 155                 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
            180                 185                 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
        195                 200                 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215
```

<210> 5
<211> 219
<212> PRT
<213> Homo Sapiens

<400> 5

```
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly
1               5                  10                  15

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu His Ser
            20                  25                  30

Asp Gly Lys Thr Tyr Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Pro
        35                  40                  45

Pro Gln Leu Leu Ile Tyr Glu Val Ser Asn Arg Phe 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 Ser
                85                  90                  95

Ile Gln Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105                 110

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
        115                 120                 125

Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
    130                 135                 140

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145                 150                 155                 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
            180                 185                 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
        195                 200                 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215
```

<210> 6
<211> 219
<212> PRT
<213> Homo Sapiens

<400> 6

```
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly
1               5                  10                  15
```

```
Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu His Ser
            20                  25                  30

Asp Gly Lys Thr Tyr Leu Tyr Trp Phe Leu Gln Lys Pro Gly Gln Pro
        35                  40                  45

Pro Gln Pro Leu Ile Tyr Glu Val Ser Asn Arg Phe 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 Ser
                85                  90                  95

Ile Gln Leu Pro Ile Thr Phe Gly His Gly Thr Arg Leu Glu Ile Lys
            100                 105                 110

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
        115                 120                 125

Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
    130                 135                 140

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145                 150                 155                 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
            180                 185                 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
        195                 200                 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215


<210>  7
<211>  214
<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 Gly Ile Ala 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 Val 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 Gln Asn Tyr Asn Ser Ala Pro Phe
                85                  90                  95

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210
```

<210> 8
<211> 214
<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 Ile Cys Arg Ala Ser Gln Gly Ile Ser Asn Asp
            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 Gln Lys Tyr Asn Ser Val Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 9
<211> 219
<212> PRT
<213> Homo Sapiens

<400> 9

Asn Ile Val Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
20 25 30

Asp Gly Asn Thr Tyr Leu Ser Trp Leu Gln Gln Arg Pro Gly Gln Pro
35 40 45

Pro Arg Leu Leu Ile Tyr Lys Ile Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ala 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

Thr Gln Phe Pro His Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100                 105                 110

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
        115                 120                 125

Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
    130                 135                 140

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145                 150                 155                 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
            180                 185                 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
        195                 200                 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215


<210>  10
<211>  219
<212>  PRT
<213>  Homo Sapiens

<400>  10

Glu Ile Val Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
1               5                   10                  15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
            20                  25                  30

Asp Gly Asn Thr Tyr Leu Ser Trp Leu Gln Gln Arg Pro Gly Gln Pro
        35                  40                  45

Pro Arg Leu Leu Ile Tyr Lys Ile Ser Asn Arg Phe Ser Gly Val Pro
    50                  55                  60

Asp Arg Phe Ser Gly Thr Gly Ala 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
```

```
Thr Gln Phe Pro His Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105                 110

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
        115                 120                 125

Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
    130                 135                 140

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145                 150                 155                 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
            180                 185                 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
        195                 200                 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215
```

<210> 11
<211> 215
<212> PRT
<213> Homo Sapiens

<400> 11

```
Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
1               5                   10                  15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Thr Val Ile Ser Ser
            20                  25                  30

Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
        35                  40                  45

Ile Ser Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser
    50                  55                  60

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu
65                  70                  75                  80

Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro
                85                  90                  95

Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala
            100                 105                 110
```

```
Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
        115                 120                 125


Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu
    130                 135                 140


Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser
145                 150                 155                 160


Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu
                165                 170                 175


Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
            180                 185                 190


Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys
        195                 200                 205


Ser Phe Asn Arg Gly Glu Cys
    210                 215


<210>  12
<211>  213
<212>  PRT
<213>  Homo Sapiens

<400>  12

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
1               5                   10                  15


Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Arg Leu
            20                  25                  30


Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr
        35                  40                  45


Gly Ala Ser Arg Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser
    50                  55                  60


Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu
65                  70                  75                  80


Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Arg Ser
                85                  90                  95


Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala Pro
            100                 105                 110


Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr
        115                 120                 125


Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys
```

130 135 140

Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
145 150 155 160

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser
165 170 175

Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
180 185 190

Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
195 200 205

Asn Arg Gly Glu Cys
210

<210> 13
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 13

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 Arg Asn Asp
20 25 30

Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg 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 Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Pro
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

```
Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175


Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190


Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205


Phe Asn Arg Gly Glu Cys
    210


<210>  14
<211>  220
<212>  PRT
<213>  Homo Sapiens

<400>  14

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 Val Trp Tyr Gln Gln Lys Pro Gly Gln
        35                  40                  45


Pro Pro Lys Leu Phe Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60


Pro Asp Arg Phe Thr 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 Phe Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
            100                 105                 110


Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
        115                 120                 125


Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
    130                 135                 140


Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
145                 150                 155                 160


Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
                165                 170                 175
```

```
Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
            180                 185                 190


Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
        195                 200                 205


Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215                 220


<210>  15
<211>  220
<212>  PRT
<213>  Homo Sapiens

<400>  15

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 Gln Gln
                85                  90                  95


Tyr Tyr Ser Thr Thr Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
            100                 105                 110


Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
        115                 120                 125


Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
    130                 135                 140


Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
145                 150                 155                 160


Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
                165                 170                 175


Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
            180                 185                 190
```

```
Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
        195                 200                 205


Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215                 220


<210>  16
<211>  220
<212>  PRT
<213>  Homo Sapiens

<400>  16

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 Asn 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 Phe Cys Gln Gln
                85                  90                  95


Tyr Tyr Gly Thr Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
            100                 105                 110


Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
        115                 120                 125


Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
    130                 135                 140


Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
145                 150                 155                 160


Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
                165                 170                 175


Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
            180                 185                 190


Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
        195                 200                 205


Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
```

210 215 220

<210> 17
<211> 220
<212> PRT
<213> Homo Sapiens

<400> 17

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 Asn 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 Phe Cys Gln Gln
85 90 95

Tyr Tyr Gly Thr Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
100 105 110

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
115 120 125

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
130 135 140

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
145 150 155 160

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
165 170 175

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
180 185 190

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
195 200 205

Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
210 215 220

<210> 18
<211> 220

<212> PRT
<213> Homo Sapiens

<400> 18

```
Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Thr 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 Gly 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 Ile Ser Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
            100                 105                 110

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
        115                 120                 125

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
    130                 135                 140

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
145                 150                 155                 160

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
                165                 170                 175

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
            180                 185                 190

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
        195                 200                 205

Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215                 220
```

<210> 19
<211> 220
<212> PRT
<213> Homo Sapiens

<400> 19

```
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 Asn
            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 Asp Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85                  90                  95


Tyr Tyr Ser Thr Thr Trp Thr Phe Gly Pro Gly Thr Lys Val Glu Ile
            100                 105                 110


Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
        115                 120                 125


Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
    130                 135                 140


Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
145                 150                 155                 160


Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
                165                 170                 175


Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
            180                 185                 190


Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
        195                 200                 205


Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215                 220


<210>  20
<211>  220
<212>  PRT
<213>  Homo Sapiens

<400>  20

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 Asn
```

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 Asp Asp Val Ala Val Tyr Tyr Cys Gln Gln
85 90 95

Tyr Tyr Ser Thr Thr Trp Thr Phe Gly Pro Gly Thr Lys Val Glu Ile
100 105 110

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
115 120 125

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
130 135 140

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
145 150 155 160

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
165 170 175

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
180 185 190

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
195 200 205

Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
210 215 220

<210> 21
<211> 220
<212> PRT
<213> Homo Sapiens

<400> 21

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 Val Leu Ile Tyr Trp Ala Ser Thr Arg Lys 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 Gly Leu Gln Ala Glu Asp Val Ala Leu Tyr Tyr Cys Gln Gln
                85                  90                  95

Tyr Tyr Ser Thr Met Phe Ser Phe Gly Gln Gly Thr Lys Leu Glu Ile
            100                 105                 110

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
        115                 120                 125

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
    130                 135                 140

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
145                 150                 155                 160

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
                165                 170                 175

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
            180                 185                 190

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
        195                 200                 205

Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215                 220


<210>  22
<211>  220
<212>  PRT
<213>  Homo Sapiens

<400>  22

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 Asp 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 Phe Tyr Cys His Gln
                85                  90                  95

Tyr Tyr Ser Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Ala Ile
            100                 105                 110

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
        115                 120                 125

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
    130                 135                 140

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
145                 150                 155                 160

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
                165                 170                 175

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
            180                 185                 190

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
        195                 200                 205

Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215                 220


<210>  23
<211>  220
<212>  PRT
<213>  Homo Sapiens

<400>  23

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 Ile Leu Tyr Arg
            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 Ala 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 Phe Cys Gln Gln
                85                  90                  95

Tyr Phe Ile Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile
            100                 105                 110

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
        115                 120                 125

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
    130                 135                 140

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
145                 150                 155                 160

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
                165                 170                 175

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
            180                 185                 190

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser
        195                 200                 205

Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210                 215                 220
```

<210> 24
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 24

```
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 His Tyr
            20                  25                  30

Leu Ala Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile
        35                  40                  45

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Lys 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 Tyr Asn Asn Tyr Pro Phe
                85                  90                  95

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Thr Val Ala Ala
```

100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 25
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 25

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Ala Ile Thr Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr
20 25 30

Leu Ala Trp Leu Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser 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 Tyr Asn Thr Tyr Pro Phe
85 90 95

Thr Phe Gly Pro Gly Thr Lys Met Asp Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

```
Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210


<210>  26
<211>  215
<212>  PRT
<213>  Homo Sapiens

<400>  26

Glu Ile Val Met Thr Gln Ser Pro Ala Thr Leu Ser Val Ser Pro Gly
1               5                   10                  15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Asn
            20                  25                  30

Leu Ala Trp Tyr Gln Gln Asp Pro Gly Gln Ala Pro Arg Leu Leu Ile
        35                  40                  45

Tyr Gly Ala Ser Arg Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65                  70                  75                  80

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln His Asn Asn Trp Pro Pro
                85                  90                  95

Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala
            100                 105                 110

Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
        115                 120                 125

Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu
    130                 135                 140
```

```
Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser
145                 150                 155                 160


Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu
                165                 170                 175


Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
            180                 185                 190


Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys
        195                 200                 205


Ser Phe Asn Arg Gly Glu Cys
    210                 215


<210>  27
<211>  214
<212>  PRT
<213>  Homo Sapiens

<400>  27

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
1               5                   10                  15


Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Ser Arg Trp
            20                  25                  30


Leu Ala 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 Ala Asn Ser Phe Pro Pro
                85                  90                  95


Thr Phe Gly Gln Gly Thr Lys Val Glu Phe Lys Arg Thr Val Ala Ala
            100                 105                 110


Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125


Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140


Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160
```

```
Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175


Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190


Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205


Phe Asn Arg Gly Glu Cys
    210


<210>  28
<211>  214
<212>  PRT
<213>  Homo Sapiens

<400>  28

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 Thr Tyr
            20                  25                  30


Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Phe 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 Ala Tyr Tyr Cys Gln Gln Ser His Ser Ala Pro Phe
                85                  90                  95


Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Thr Val Ala Ala
            100                 105                 110


Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125


Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140


Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160


Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175


Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
```

180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 29
<211> 213
<212> PRT
<213> Homo Sapiens

<400> 29

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Thr Ile Ser Ile 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 Leu Thr
85 90 95

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro
100 105 110

Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr
115 120 125

Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys
130 135 140

Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
145 150 155 160

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser
165 170 175

Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
180 185 190

Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
195 200 205

Asn Arg Gly Glu Cys
210

<210> 30
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 30

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 Arg Ser Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Arg Pro Gly Asn Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Val Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Arg Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Ile Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 31
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 31

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Arg Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Thr Ile Ser Arg 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 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 Leu Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ile Tyr Ser Thr Ser Ile
85 90 95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 32
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 32

```
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 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 Glu 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 Ile Thr Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Ile Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210
```

<210> 33
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 33

```
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 Arg Tyr
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Thr 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 Asn Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Phe Thr Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210


<210>  34
<211>  214
<212>  PRT
<213>  Homo Sapiens

<400>  34

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 Thr 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 Phe Ser Ser Leu Gln Pro
65                  70                  75                  80


Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Phe Ser Pro Ile
                85                  90                  95


Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110


Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125


Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140


Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160


Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175


Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190


Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205


Phe Asn Arg Gly Glu Cys
    210


<210>  35
<211>  433
<212>  PRT
<213>  Homo Sapiens

<400>  35

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 Thr 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 Leu Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Phe Ala Ser Tyr Tyr Cys Gln Gln Ser Phe Tyr Thr Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Ala Ser Thr Lys Gly
            100                 105                 110

Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser
        115                 120                 125

Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val
    130                 135                 140

Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe
145                 150                 155                 160

Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val
                165                 170                 175

Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val
            180                 185                 190

Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys
        195                 200                 205

Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro
    210                 215                 220

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
225                 230                 235                 240

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
                245                 250                 255

Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
            260                 265                 270

Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val
        275                 280                 285

Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu
    290                 295                 300

Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys
305                 310                 315                 320
```

```
Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
                325                 330                 335

Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr
            340                 345                 350

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
        355                 360                 365

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu
    370                 375                 380

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
385                 390                 395                 400

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
                405                 410                 415

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
            420                 425                 430

Lys
```

<210> 36
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 36

```
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 Thr Val 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 Phe Thr Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
```

115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 37
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 37

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 Thr 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 Ser Tyr Tyr Cys Gln Gln Ser Phe Tyr Ala Pro Ile
85 90 95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

```
Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160


Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175


Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190


Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205


Phe Asn Arg Gly Glu Cys
    210


<210>  38
<211>  214
<212>  PRT
<213>  Homo Sapiens

<400>  38

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 Thr 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 Phe Thr Pro Ile
                85                  90                  95


Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110


Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125


Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140


Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160
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```
Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175


Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190


Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205


Phe Asn Arg Gly Glu Cys
    210


<210>  39
<211>  214
<212>  PRT
<213>  Homo Sapiens

<400>  39

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 Gln Ala Ser Gln Asp Ile Ser Asn Tyr
            20                  25                  30


Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45


Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60


Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80


Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Tyr Leu Pro Phe
                85                  90                  95


Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg Thr Val Ala Ala
            100                 105                 110


Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125


Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140


Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160


Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175
```

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 40
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 40

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 Gln Ala Ser Gln Asp Ile Ser Asn Ser
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Glu Leu Leu Ile
35 40 45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Cys Asp Asp Leu Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser

195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 41
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 41

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 Gln Ala Ser Gln Asp Ile Ser Asp Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln His Tyr Asp Asn Leu Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 42
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 42

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                  10                  15

Asp Arg Val Ala Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Tyr
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu Pro Leu
                85                  90                  95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210
```

<210> 43
<211> 214
<212> PRT

<213> Homo Sapiens

<400> 43

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 Gln Ala Ser Gln Asp Ile Ser Asn Ser
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Asp Ala Ser Ile Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Glu Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Cys Asp Ile Leu Pro Leu
85 90 95

Ser Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 44
<211> 214
<212> PRT
<213> Homo Sapiens

<400> 44

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 Gln Ala Ser Gln Asp Ile Ser Asn Ser
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu Pro Leu
                85                  90                  95

Ala Phe Gly Gly Gly Thr Lys Val Glu Ile Arg Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210


<210>  45
<211>  214
<212>  PRT
<213>  Homo Sapiens

<400>  45

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15

Asp Gly Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Thr Asn Tyr
            20                  25                  30
```

```
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Ser Leu Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210


<210>  46
<211>  214
<212>  PRT
<213>  Homo Sapiens

<400>  46

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 Gln Ala Ser Gln Asp Ile Ser Asn Tyr
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Leu Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45
```

```
His Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210


<210>  47
<211>  214
<212>  PRT
<213>  Homo Sapiens

<400>  47

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 Gln Ala Ser Gln Asp Ile Ser Asp Tyr
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
```

```
Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln His Tyr Asp Asn Leu Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210

<210>  48
<211>  214
<212>  PRT
<213>  Homo Sapiens

<400>  48

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 Gln Ala Ser Gln Asp Ile Ser Asn Ser
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln His Tyr Asp Asn Leu Pro Ile
```

85 90 95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
195 200 205

Phe Asn Arg Gly Glu Cys
210

<210> 49
<211> 446
<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 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 Ser Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu
50 55 60

Gln Asp 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 Glu Asp Asn Trp Asn Tyr Gly Phe Phe Asp Tyr Trp Gly Gln
100 105 110

```
Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
        115                 120                 125

Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala
    130                 135                 140

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145                 150                 155                 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
                165                 170                 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
            180                 185                 190

Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys
        195                 200                 205

Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val
    210                 215                 220

Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
225                 230                 235                 240

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
                245                 250                 255

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
            260                 265                 270

Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
        275                 280                 285

Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val
    290                 295                 300

Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
305                 310                 315                 320

Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
                325                 330                 335

Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
            340                 345                 350

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
        355                 360                 365

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
    370                 375                 380
```

```
Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp
385                 390                 395                 400


Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
                405                 410                 415


Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
            420                 425                 430


Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445


<210>  50
<211>  443
<212>  PRT
<213>  Homo Sapiens

<400>  50

Gln Val His Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15


Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr Thr Phe Thr Gly His
            20                  25                  30


Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45


Gly Trp Ile Asn Pro Asn Ser Gly Gly Thr Asn Cys 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 Ser Ile Ala Val Ala Leu Asp Tyr Trp Gly Gln Gly Thr Leu
            100                 105                 110


Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu
        115                 120                 125


Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys
    130                 135                 140


Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser
145                 150                 155                 160


Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser
                165                 170                 175
```

```
Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn
            180                 185                 190

Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn
        195                 200                 205

Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro
    210                 215                 220

Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro
225                 230                 235                 240

Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
                245                 250                 255

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn
            260                 265                 270

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
        275                 280                 285

Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val
    290                 295                 300

Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
305                 310                 315                 320

Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys
                325                 330                 335

Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu
            340                 345                 350

Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe
        355                 360                 365

Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
    370                 375                 380

Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe
385                 390                 395                 400

Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
                405                 410                 415

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
            420                 425                 430

Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440
```

<210> 51
<211> 443
<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 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 Trp Ile Asn Pro Asn Ser Gly Gly Thr Asn His Thr 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 Ser Ile Ala Val Ala Leu Asp Tyr Trp Gly Gln Gly Thr Leu
            100                 105                 110

Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu
        115                 120                 125

Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys
    130                 135                 140

Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser
145                 150                 155                 160

Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser
                165                 170                 175

Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn
            180                 185                 190

Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn
        195                 200                 205

Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro
    210                 215                 220

Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro
225                 230                 235                 240
```

```
Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
                245                 250                 255

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn
            260                 265                 270

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
        275                 280                 285

Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val
    290                 295                 300

Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
305                 310                 315                 320

Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys
                325                 330                 335

Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu
            340                 345                 350

Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe
        355                 360                 365

Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
    370                 375                 380

Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe
385                 390                 395                 400

Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
                405                 410                 415

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
            420                 425                 430

Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440


<210>  52
<211>  448
<212>  PRT
<213>  Homo Sapiens

<400>  52

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Arg Lys Pro Gly Ala
1               5                   10                  15

Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr Thr Leu Thr Glu Leu
            20                  25                  30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Met
```

```
        35                  40                  45

Gly Ser Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln Lys Phe
    50                  55                  60

Gln Gly Arg Val Thr Met Leu Glu Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Thr Glu Gly Asp Gly Gly Tyr Tyr Tyr Tyr Gly Met Asp Val Trp
            100                 105                 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
        115                 120                 125

Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr
    130                 135                 140

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
145                 150                 155                 160

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
                165                 170                 175

Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr
            180                 185                 190

Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp
        195                 200                 205

His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys
    210                 215                 220

Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser
225                 230                 235                 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270

Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285

Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val
    290                 295                 300

Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
```

305 310 315 320

Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr
325 330 335

Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
340 345 350

Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
355 360 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
370 375 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp
385 390 395 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
405 410 415

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
420 425 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440 445

<210> 53
<211> 448
<212> PRT
<213> Homo Sapiens

<400> 53

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 Met Tyr Ser Ser Gly Trp Tyr Gly Val Phe Asp Tyr Trp
100 105 110

```
Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
        115                 120                 125

Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr
    130                 135                 140

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
145                 150                 155                 160

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
                165                 170                 175

Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr
            180                 185                 190

Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp
        195                 200                 205

His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys
    210                 215                 220

Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser
225                 230                 235                 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270

Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285

Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val
    290                 295                 300

Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320

Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr
                325                 330                 335

Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350

Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380
```

```
Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp
385                 390                 395                 400


Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415


Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430


Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445


<210>  54
<211>  449
<212>  PRT
<213>  Homo Sapiens

<400>  54

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 Val Leu 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 Val Tyr Ser Ser Gly Trp Ser Phe Tyr Gly Met Asp Val
            100                 105                 110


Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly
        115                 120                 125


Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser
    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 Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val
        195                 200                 205

Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys
    210                 215                 220

Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270

Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320

Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys
                325                 330                 335

Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu
385                 390                 395                 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                405                 410                 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
        435                 440                 445
```

Lys

<210> 55
<211> 444
<212> PRT
<213> Homo Sapiens

<400> 55

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1 5 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Gly
20 25 30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
35 40 45

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
50 55 60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn 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 His Arg Arg Glu Leu Pro Phe Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
115 120 125

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
130 135 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145 150 155 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
165 170 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
180 185 190

Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser
195 200 205

Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys
210 215 220

```
Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe
225                 230                 235                 240


Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                245                 250                 255


Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe
            260                 265                 270


Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
        275                 280                 285


Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr
    290                 295                 300


Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305                 310                 315                 320


Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
                325                 330                 335


Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
            340                 345                 350


Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
        355                 360                 365


Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
    370                 375                 380


Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser
385                 390                 395                 400


Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
                405                 410                 415


Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
            420                 425                 430


Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440


<210>  56
<211>  444
<212>  PRT
<213>  Homo Sapiens

<400>  56

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1               5                   10                  15


Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Gly
```

```
            20                  25                  30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35                  40                  45

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
    50                  55                  60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Thr Gln Val
65                  70                  75                  80

Val Leu Thr Val Thr Asp Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
                85                  90                  95

Cys Ala His Arg Asn Trp Thr Pro Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys
    210                 215                 220

Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe
225                 230                 235                 240

Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                245                 250                 255

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe
            260                 265                 270

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
        275                 280                 285

Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr
```

290 295 300

Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305 310 315 320

Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
325 330 335

Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
340 345 350

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
355 360 365

Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
370 375 380

Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser
385 390 395 400

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
405 410 415

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
420 425 430

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440

<210> 57
<211> 444
<212> PRT
<213> Homo Sapiens

<400> 57

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1 5 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Asn Thr Gly
20 25 30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
35 40 45

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
50 55 60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn 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 His Arg Leu Glu Leu Pro Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys
    210                 215                 220

Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe
225                 230                 235                 240

Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                245                 250                 255

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe
            260                 265                 270

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
        275                 280                 285

Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr
    290                 295                 300

Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305                 310                 315                 320

Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
                325                 330                 335

Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
            340                 345                 350

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
        355                 360                 365
```

```
Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
    370                 375                 380

Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser
385                 390                 395                 400

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
                405                 410                 415

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
            420                 425                 430

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440
```

<210> 58
<211> 444
<212> PRT
<213> Homo Sapiens

<400> 58

```
Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1               5                   10                  15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Gly
            20                  25                  30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35                  40                  45

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
    50                  55                  60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn Gln Val
65                  70                  75                  80

Val Leu Thr Met Thr Asn Leu Asp Pro Val Asp Thr Ala Thr Tyr Tyr
                85                  90                  95

Cys Ala His Arg Arg Glu Val Pro Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160
```

```
Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys
    210                 215                 220

Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe
225                 230                 235                 240

Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                245                 250                 255

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe
            260                 265                 270

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
        275                 280                 285

Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr
    290                 295                 300

Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305                 310                 315                 320

Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
                325                 330                 335

Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
            340                 345                 350

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
        355                 360                 365

Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
    370                 375                 380

Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser
385                 390                 395                 400

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
                405                 410                 415

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
            420                 425                 430
```

```
Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440


<210>  59
<211>  444
<212>  PRT
<213>  Homo Sapiens

<400>  59

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1               5                   10                  15


Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Gly
            20                  25                  30


Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35                  40                  45


Trp Leu Ala Leu Ile Tyr Trp Asn Val Glu Lys Arg Tyr Ser Pro Ser
    50                  55                  60


Leu Arg Ser Arg Leu Thr Ile Thr Lys Ala Thr Ser Lys Asn 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 His Arg His Thr Asn Pro Phe Glu Tyr Trp Gly Gln Gly Thr
            100                 105                 110


Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125


Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
    130                 135                 140


Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160


Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175


Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190


Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser
        195                 200                 205


Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys
    210                 215                 220
```

```
Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe
225                 230                 235                 240


Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                245                 250                 255


Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe
            260                 265                 270


Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
        275                 280                 285


Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr
    290                 295                 300


Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305                 310                 315                 320


Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
                325                 330                 335


Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
            340                 345                 350


Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
        355                 360                 365


Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
    370                 375                 380


Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser
385                 390                 395                 400


Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
                405                 410                 415


Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
            420                 425                 430


Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440


<210>  60
<211>  444
<212>  PRT
<213>  Homo Sapiens

<400>  60

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1               5                   10                  15


Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Gly
```

```
            20                  25                  30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35                  40                  45

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
    50                  55                  60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn 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 His Arg Gly Glu Leu Pro Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys
    210                 215                 220

Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe
225                 230                 235                 240

Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                245                 250                 255

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe
            260                 265                 270

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
        275                 280                 285

Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr
```

290 295 300

Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305 310 315 320

Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
325 330 335

Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
340 345 350

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
355 360 365

Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
370 375 380

Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser
385 390 395 400

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
405 410 415

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
420 425 430

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440

<210> 61
<211> 447
<212> PRT
<213> Homo Sapiens

<400> 61

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 Pro Phe Ser Arg Tyr
20 25 30

Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Ala 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 Arg Val Gly Ala Thr Pro Asp Ala Phe Asp Ile Trp Gly
            100                 105                 110

Gln Gly Thr Met Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
        115                 120                 125

Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
    130                 135                 140

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145                 150                 155                 160

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
                165                 170                 175

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
            180                 185                 190

Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His
        195                 200                 205

Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys
    210                 215                 220

Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
225                 230                 235                 240

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
                245                 250                 255

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
            260                 265                 270

Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
        275                 280                 285

Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser
    290                 295                 300

Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
305                 310                 315                 320

Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile
                325                 330                 335

Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
            340                 345                 350

Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu
        355                 360                 365
```

```
Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
    370                 375                 380

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser
385                 390                 395                 400

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
                405                 410                 415

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
            420                 425                 430

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445

<210>  62
<211>  454
<212>  PRT
<213>  Homo Sapiens

<400>  62

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 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 Glu Gly Ile Ala Val Ala Gly Thr Ala Glu Tyr Tyr Tyr Tyr
            100                 105                 110

Tyr Ala Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
    130                 135                 140

Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
145                 150                 155                 160
```

```
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
                165                 170                 175

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
            180                 185                 190

Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
        195                 200                 205

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
    210                 215                 220

Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
225                 230                 235                 240

Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
                245                 250                 255

Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
            260                 265                 270

Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
        275                 280                 285

Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn
    290                 295                 300

Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
305                 310                 315                 320

Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
                325                 330                 335

Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
            340                 345                 350

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
        355                 360                 365

Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
    370                 375                 380

Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
385                 390                 395                 400

Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
                405                 410                 415

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
            420                 425                 430
```

```
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
        435                 440                 445


Ser Leu Ser Pro Gly Lys
    450


<210>  63
<211>  451
<212>  PRT
<213>  Homo Sapiens

<400>  63

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 Glu Gly Ile Ala Ala Arg Asp Ser Tyr Tyr Tyr Tyr Ala Met
            100                 105                 110


Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr
        115                 120                 125


Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser
    130                 135                 140


Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
145                 150                 155                 160


Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
                165                 170                 175


Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
            180                 185                 190


Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys
        195                 200                 205
```

```
Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu
    210                 215                 220

Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
225                 230                 235                 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270

Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe
    290                 295                 300

Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile
                325                 330                 335

Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
        355                 360                 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400

Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445

Pro Gly Lys
    450


<210>  64
<211>  451
<212>  PRT
<213>  Homo Sapiens
```

<400> 64

```
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 Thr 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 Glu Tyr Tyr Cys
                85                  90                  95

Ala Lys Glu Gly Ile Ala Gly Arg Asp Ser Tyr Tyr Tyr Tyr Gly Met
            100                 105                 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr
        115                 120                 125

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser
    130                 135                 140

Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
145                 150                 155                 160

Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
                165                 170                 175

Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
            180                 185                 190

Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys
        195                 200                 205

Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu
    210                 215                 220

Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
225                 230                 235                 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
```

260 265 270

Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val
275 280 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe
290 295 300

Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly
305 310 315 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile
325 330 335

Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val
340 345 350

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
355 360 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
370 375 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385 390 395 400

Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
405 410 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
420 425 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
435 440 445

Pro Gly Lys
450

<210> 65
<211> 449
<212> PRT
<213> Homo Sapiens

<400> 65

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 Phe Ile Ser Asp Asp Gly Ser Thr Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Met 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 Tyr Tyr Asp Ser Ser Gly Tyr Tyr Tyr Gly Phe Asp Tyr
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
        115                 120                 125

Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser
    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 Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val
        195                 200                 205

Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys
    210                 215                 220

Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270

Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320
```

Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys
325 330 335

Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
340 345 350

Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr
355 360 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
370 375 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu
385 390 395 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
405 410 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
420 425 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
435 440 445

Lys

<210> 66
<211> 440
<212> PRT
<213> Homo Sapiens

<400> 66

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 Asn Val Ile Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
            100                 105                 110

Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys
        115                 120                 125

Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
145                 150                 155                 160

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
                165                 170                 175

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr
            180                 185                 190

Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro
    210                 215                 220

Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
225                 230                 235                 240

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
                245                 250                 255

Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val
            260                 265                 270

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
        275                 280                 285

Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln
    290                 295                 300

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly
305                 310                 315                 320

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro
                325                 330                 335

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
            340                 345                 350

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
        355                 360                 365
```

```
Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
    370                 375                 380

Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
385                 390                 395                 400

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
                405                 410                 415

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
            420                 425                 430

Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440
```

<210> 67
<211> 446
<212> PRT
<213> Homo Sapiens

<400> 67

```
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

Asp 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 Ile 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 Gly Ala Thr Gly Ala Glu Tyr Phe Gln His Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
        115                 120                 125

Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala
    130                 135                 140

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145                 150                 155                 160
```

```
Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
                165                 170                 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
            180                 185                 190

Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys
        195                 200                 205

Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val
    210                 215                 220

Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
225                 230                 235                 240

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
                245                 250                 255

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
            260                 265                 270

Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
        275                 280                 285

Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val
    290                 295                 300

Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
305                 310                 315                 320

Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
                325                 330                 335

Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
            340                 345                 350

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
        355                 360                 365

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
    370                 375                 380

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp
385                 390                 395                 400

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
                405                 410                 415

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
            420                 425                 430
```

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440 445

<210> 68
<211> 444
<212> PRT
<213> Homo Sapiens

<400> 68

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 Leu Leu Trp Phe Gly Glu Thr Phe Asp Tyr Trp Gly Gln Gly Ser
100 105 110

Leu Val Thr Val Ser Pro Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
115 120 125

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
130 135 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145 150 155 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
165 170 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
180 185 190

Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser
195 200 205

Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys
210 215 220

Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe

225 230 235 240

Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
245 250 255

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe
260 265 270

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
275 280 285

Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr
290 295 300

Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305 310 315 320

Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
325 330 335

Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
340 345 350

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
355 360 365

Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
370 375 380

Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser
385 390 395 400

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
405 410 415

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
420 425 430

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440

<210> 69
<211> 441
<212> PRT
<213> Homo Sapiens

<400> 69

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 Ser 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 Asn Leu Pro Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100                 105                 110

Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
        115                 120                 125

Cys Ser Arg Ser Thr Ser Glu Ser 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 Asn Phe Gly
            180                 185                 190

Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys
        195                 200                 205

Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys
    210                 215                 220

Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
225                 230                 235                 240

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
                245                 250                 255

Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr
            260                 265                 270

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
        275                 280                 285

Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His
    290                 295                 300
```

```
Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
305                 310                 315                 320

Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln
                325                 330                 335

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met
            340                 345                 350

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
        355                 360                 365

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
    370                 375                 380

Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu
385                 390                 395                 400

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
                405                 410                 415

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
            420                 425                 430

Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440
```

<210> 70
<211> 449
<212> PRT
<213> Homo Sapiens

<400> 70

```
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 Asp Asp Gly Ser Asn Gln Tyr Tyr Thr Asp Ser Val
    50                  55                  60

Lys Gly Arg Phe Thr Val Ser Arg Asp Asn Ser Lys Asn Thr 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 Ser His Tyr Gly Gly Asp Tyr Asp Tyr Tyr Gly Met Asp Val
            100                 105                 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly
        115                 120                 125

Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser
    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 Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val
        195                 200                 205

Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys
    210                 215                 220

Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270

Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320

Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys
                325                 330                 335

Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365
```

```
Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu
385                 390                 395                 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                405                 410                 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
        435                 440                 445

Lys
```

<210> 71
<211> 446
<212> PRT
<213> Homo Sapiens

<400> 71

```
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 Arg 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 Asp Gly Trp Gln Gln Gln Ala Pro Phe Asp Tyr Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
        115                 120                 125

Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala
    130                 135                 140
```

```
Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145                 150                 155                 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
                165                 170                 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
            180                 185                 190

Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys
        195                 200                 205

Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val
    210                 215                 220

Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
225                 230                 235                 240

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
                245                 250                 255

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
            260                 265                 270

Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
        275                 280                 285

Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val
    290                 295                 300

Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
305                 310                 315                 320

Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
                325                 330                 335

Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
            340                 345                 350

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
        355                 360                 365

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
    370                 375                 380

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp
385                 390                 395                 400

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
                405                 410                 415
```

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
420 425 430

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440 445

<210> 72
<211> 444
<212> PRT
<213> Homo Sapiens

<400> 72

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 His
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 Asn Tyr Ala Asp Ser Val
50 55 60

Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Asp
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 Trp Gly Ile Ser Ala Pro Phe Asp Cys Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
115 120 125

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
130 135 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145 150 155 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
165 170 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
180 185 190

Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser
195 200 205

Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys

210 215 220

Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe
225 230 235 240

Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
245 250 255

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe
260 265 270

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
275 280 285

Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr
290 295 300

Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305 310 315 320

Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
325 330 335

Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
340 345 350

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
355 360 365

Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
370 375 380

Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser
385 390 395 400

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
405 410 415

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
420 425 430

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440

<210> 73
<211> 441
<212> PRT
<213> Homo Sapiens

<400> 73

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 Ala Tyr
            20                  25                  30

Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ser Tyr Ile Ser Ser Ser Gly Arg Thr 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 Phe
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Leu Trp Ala Pro Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100                 105                 110

Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
        115                 120                 125

Cys Ser Arg Ser Thr Ser Glu Ser 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 Asn Phe Gly
            180                 185                 190

Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys
        195                 200                 205

Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys
    210                 215                 220

Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
225                 230                 235                 240

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
                245                 250                 255

Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr
            260                 265                 270

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
        275                 280                 285
```

```
Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His
    290                 295                 300

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
305                 310                 315                 320

Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln
                325                 330                 335

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met
            340                 345                 350

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
        355                 360                 365

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
    370                 375                 380

Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu
385                 390                 395                 400

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
                405                 410                 415

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
            420                 425                 430

Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440


<210>  74
<211>  451
<212>  PRT
<213>  Homo Sapiens

<400>  74

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

Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ser His Ile Ser Ser Ser Ser Arg Thr Ile Tyr Tyr Ala Asp Ser Val
    50                  55                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Val Tyr
65                  70                  75                  80
```

```
Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Gly Tyr Asn Trp Asn Gly Gly Gly Asn Tyr Tyr Gly Met
            100                 105                 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr
        115                 120                 125

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser
    130                 135                 140

Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
145                 150                 155                 160

Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
                165                 170                 175

Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
            180                 185                 190

Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys
        195                 200                 205

Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu
    210                 215                 220

Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
225                 230                 235                 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270

Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe
    290                 295                 300

Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile
                325                 330                 335

Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350
```

```
Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
        355                 360                 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400

Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445

Pro Gly Lys
    450
```

<210> 75
<211> 451
<212> PRT
<213> Homo Sapiens

<400> 75

```
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

Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ser His Ile Ser Arg Ser Ser Arg Thr 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 Asp Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Gly Tyr Asn Trp Asn Asn Gly Gly Tyr Tyr Tyr Gly Met
            100                 105                 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr
        115                 120                 125
```

```
Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser
    130                 135                 140

Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
145                 150                 155                 160

Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
                165                 170                 175

Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
            180                 185                 190

Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys
        195                 200                 205

Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu
    210                 215                 220

Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
225                 230                 235                 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270

Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe
    290                 295                 300

Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile
                325                 330                 335

Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
        355                 360                 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400
```

```
Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445

Pro Gly Lys
    450
```

<210> 76
<211> 444
<212> PRT
<213> Homo Sapiens

<400> 76

```
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 Val 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 His Ser 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 Asn Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ala Arg Gly Pro Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr
            100                 105                 110

Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
```

```
            180                 185                 190

Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys
    210                 215                 220

Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe
225                 230                 235                 240

Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                245                 250                 255

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe
            260                 265                 270

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
        275                 280                 285

Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr
    290                 295                 300

Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305                 310                 315                 320

Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
                325                 330                 335

Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
            340                 345                 350

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
        355                 360                 365

Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
    370                 375                 380

Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser
385                 390                 395                 400

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
                405                 410                 415

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
            420                 425                 430

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440
```

<210> 77

<211> 453
<212> PRT
<213> Homo Sapiens

<400> 77

```
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 Arg 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 His Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
    50                  55                  60

Leu Lys Ser Arg Val Asn Met 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 Ala Leu Arg Gly Ile Val Leu Met Val Tyr Val Leu Gly
            100                 105                 110

Ala Leu Asp Ile Trp Gly Gln Gly Thr Lys Val Thr Val Ser Ser Ala
        115                 120                 125

Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser
    130                 135                 140

Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
145                 150                 155                 160

Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly
                165                 170                 175

Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu
            180                 185                 190

Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr
        195                 200                 205

Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr
    210                 215                 220

Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro
225                 230                 235                 240

Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
                245                 250                 255
```

```
Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
            260                 265                 270

Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
        275                 280                 285

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
    290                 295                 300

Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu
305                 310                 315                 320

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala
                325                 330                 335

Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro
            340                 345                 350

Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
        355                 360                 365

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
    370                 375                 380

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
385                 390                 395                 400

Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
                405                 410                 415

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
            420                 425                 430

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
        435                 440                 445

Leu Ser Pro Gly Lys
    450


<210>  78
<211>  453
<212>  PRT
<213>  Homo Sapiens

<400>  78

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 Asp Glu Thr Val Val Arg Gly Leu Ile Arg Tyr Cys Tyr
            100                 105                 110

Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala
        115                 120                 125

Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser
    130                 135                 140

Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
145                 150                 155                 160

Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly
                165                 170                 175

Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu
            180                 185                 190

Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr
        195                 200                 205

Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr
    210                 215                 220

Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro
225                 230                 235                 240

Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
                245                 250                 255

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
            260                 265                 270

Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
        275                 280                 285

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
    290                 295                 300
```

```
Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu
305                 310                 315                 320

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala
                325                 330                 335

Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro
            340                 345                 350

Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
        355                 360                 365

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
    370                 375                 380

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
385                 390                 395                 400

Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
                405                 410                 415

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
            420                 425                 430

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
        435                 440                 445

Leu Ser Pro Gly Lys
    450
```

<210> 79
<211> 448
<212> PRT
<213> Homo Sapiens

<400> 79

```
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1               5                   10                  15

Thr Leu Ser Leu Asn 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 His Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
    50                  55                  60

Leu Lys Ser Arg Ile Thr Ile Ser Ala Asp Thr Ser Lys Asn Gln Phe
65                  70                  75                  80
```

```
Ser Leu Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ala Arg Asp Arg Gly Gly Gly Asp Tyr Gly Arg Met Asp Val Trp
            100                 105                 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
        115                 120                 125

Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr
    130                 135                 140

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
145                 150                 155                 160

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
                165                 170                 175

Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr
            180                 185                 190

Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp
        195                 200                 205

His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys
    210                 215                 220

Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser
225                 230                 235                 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270

Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285

Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val
    290                 295                 300

Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320

Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr
                325                 330                 335

Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350
```

```
Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365


Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380


Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp
385                 390                 395                 400


Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415


Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430


Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445


<210>  80
<211>  448
<212>  PRT
<213>  Homo Sapiens

<400>  80

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1               5                   10                  15


Thr Leu Ser Leu Asn 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 His Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
    50                  55                  60


Leu Lys Ser Arg Ile Thr Ile Ser Ala Asp Thr Ser Lys Asn Gln Phe
65                  70                  75                  80


Ser Leu Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
                85                  90                  95


Cys Ala Arg Asp Arg Gly Gly Gly Asp Tyr Gly Arg Met Asp Val Trp
            100                 105                 110


Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro
        115                 120                 125


Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr
    130                 135                 140


Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
```

```
145                 150                 155                 160

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro
                165                 170                 175

Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr
            180                 185                 190

Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp
        195                 200                 205

His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys
    210                 215                 220

Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser
225                 230                 235                 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270

Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285

Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val
    290                 295                 300

Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320

Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr
                325                 330                 335

Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350

Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp
385                 390                 395                 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
```

420 425 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440 445

<210> 81
<211> 445
<212> PRT
<213> Homo Sapiens

<400> 81

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 His Ser Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Ile Thr Lys 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 Ser Asn Asn Tyr Gly Cys Phe Ala Leu Trp Gly Arg Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
115 120 125

Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu
130 135 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145 150 155 160

Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu
165 170 175

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
180 185 190

Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro
195 200 205

Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu
210 215 220

```
Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu
225                 230                 235                 240

Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
                245                 250                 255

Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln
            260                 265                 270

Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
        275                 280                 285

Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu
    290                 295                 300

Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
305                 310                 315                 320

Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
                325                 330                 335

Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
            340                 345                 350

Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
        355                 360                 365

Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
    370                 375                 380

Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly
385                 390                 395                 400

Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
                405                 410                 415

Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
            420                 425                 430

His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445


<210>  82
<211>  445
<212>  PRT
<213>  Homo Sapiens

<400>  82

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 His Ser Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
    50                  55                  60

Leu Lys Ser Arg Ile Thr Lys 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 Ser Asn Asn Tyr Gly Cys Phe Ala Leu Trp Gly Arg Gly
            100                 105                 110

Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
        115                 120                 125

Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu
    130                 135                 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145                 150                 155                 160

Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu
                165                 170                 175

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu
    210                 215                 220

Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu
225                 230                 235                 240

Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
                245                 250                 255

Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln
            260                 265                 270

Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
        275                 280                 285
```

```
Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu
    290                 295                 300

Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
305                 310                 315                 320

Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
                325                 330                 335

Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
            340                 345                 350

Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
        355                 360                 365

Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
    370                 375                 380

Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly
385                 390                 395                 400

Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
                405                 410                 415

Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
            420                 425                 430

His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445


<210>  83
<211>  459
<212>  PRT
<213>  Homo Sapiens

<400>  83

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 His 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 Ser Gly Tyr Asn Tyr Gly Leu Tyr Tyr Tyr Asp Ser Ser Gly
            100                 105                 110

Tyr Pro Ser Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr
        115                 120                 125

Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu
    130                 135                 140

Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys
145                 150                 155                 160

Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser
                165                 170                 175

Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser
            180                 185                 190

Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn
        195                 200                 205

Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn
    210                 215                 220

Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro
225                 230                 235                 240

Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro
                245                 250                 255

Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
            260                 265                 270

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn
        275                 280                 285

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
    290                 295                 300

Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val
305                 310                 315                 320

Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
                325                 330                 335

Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys
            340                 345                 350
```

```
Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu
        355                 360                 365

Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe
    370                 375                 380

Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
385                 390                 395                 400

Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe
                405                 410                 415

Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
            420                 425                 430

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
        435                 440                 445

Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455
```

<210> 84
<211> 451
<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

Asp Tyr Tyr Trp Asn Trp Val Arg Gln His Pro Gly Lys Gly Leu Glu
        35                  40                  45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Gly 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 Phe Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Phe
                85                  90                  95

Cys Ala Arg Thr Tyr Tyr Asp Ile Leu Thr Gly Tyr Pro Phe Tyr Phe
            100                 105                 110

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr
        115                 120                 125

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser
```

130 135 140

Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
145 150 155 160

Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
165 170 175

Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
180 185 190

Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys
195 200 205

Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu
210 215 220

Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
225 230 235 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
245 250 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
260 265 270

Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val
275 280 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe
290 295 300

Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly
305 310 315 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile
325 330 335

Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val
340 345 350

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
355 360 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
370 375 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385 390 395 400

Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val

405 410 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
420 425 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
435 440 445

Pro Gly Lys
450

<210> 85
<211> 451
<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 Gly
20 25 30

Asp Tyr Tyr Trp Asn Trp Val Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Gly 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 Phe Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Phe
85 90 95

Cys Ala Arg Thr Tyr Tyr Asp Ile Leu Thr Gly Tyr Pro Phe Tyr Phe
100 105 110

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr
115 120 125

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser
130 135 140

Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
145 150 155 160

Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
165 170 175

Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
180 185 190

```
Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys
        195                 200                 205

Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu
    210                 215                 220

Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
225                 230                 235                 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270

Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe
    290                 295                 300

Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile
                325                 330                 335

Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
        355                 360                 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400

Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445

Pro Gly Lys
    450
```

<210> 86
<211> 446
<212> PRT
<213> Homo Sapiens

<400> 86

```
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 Gly Tyr Ser Ser Ser Trp Tyr Trp Phe Asp Pro Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
        115                 120                 125

Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala
    130                 135                 140

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145                 150                 155                 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
                165                 170                 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
            180                 185                 190

Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys
        195                 200                 205

Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val
    210                 215                 220

Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
225                 230                 235                 240
```

```
Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
                245                 250                 255

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
            260                 265                 270

Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
        275                 280                 285

Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val
    290                 295                 300

Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
305                 310                 315                 320

Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
                325                 330                 335

Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
            340                 345                 350

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
        355                 360                 365

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
    370                 375                 380

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp
385                 390                 395                 400

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
                405                 410                 415

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
            420                 425                 430

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445


<210>  87
<211>  446
<212>  PRT
<213>  Homo Sapiens

<400>  87

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 Gly Tyr Ser Ser Ser Trp Phe Trp Phe Asp Pro Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
        115                 120                 125

Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala
    130                 135                 140

Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145                 150                 155                 160

Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
                165                 170                 175

Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
            180                 185                 190

Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys
        195                 200                 205

Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val
    210                 215                 220

Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
225                 230                 235                 240

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
                245                 250                 255

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
            260                 265                 270

Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
        275                 280                 285

Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val
    290                 295                 300
```

Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
305 310 315 320

Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
325 330 335

Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
340 345 350

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
355 360 365

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
370 375 380

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp
385 390 395 400

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
405 410 415

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
420 425 430

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440 445

<210> 88
<211> 449
<212> PRT
<213> Homo Sapiens

<400> 88

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 Ser Tyr
20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Ala Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Arg Ile Tyr Thr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys
50 55 60

Ser Arg Val Thr Met 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 Asp Gly Tyr Ser Tyr Gly His Tyr Tyr Tyr Tyr Gly Met Asp Val

100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly
115 120 125

Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser
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 Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val
195 200 205

Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys
210 215 220

Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro
225 230 235 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
245 250 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
260 265 270

Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
275 280 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val
290 295 300

Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu
305 310 315 320

Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys
325 330 335

Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
340 345 350

Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr
355 360 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu

370 375 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu
385 390 395 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
405 410 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
420 425 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
435 440 445

Lys

<210> 89
<211> 452
<212> PRT
<213> Homo Sapiens

<400> 89

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 Val Ser Ser Gly
20 25 30

Gly Ser Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Ser Ile Val Thr Ser Arg 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 Ser Ala Leu Arg Tyr Phe Asp Trp Leu Phe Ser Asp Val
100 105 110

Ser Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Ala Ser
115 120 125

Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr
130 135 140

Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
145 150 155 160

```
Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
                165                 170                 175

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
            180                 185                 190

Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr
        195                 200                 205

Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val
    210                 215                 220

Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val
225                 230                 235                 240

Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
                245                 250                 255

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
            260                 265                 270

His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu
        275                 280                 285

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr
    290                 295                 300

Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn
305                 310                 315                 320

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro
                325                 330                 335

Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln
            340                 345                 350

Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
        355                 360                 365

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
    370                 375                 380

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
385                 390                 395                 400

Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
                405                 410                 415

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
            420                 425                 430
```

```
Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
        435                 440                 445


Ser Pro Gly Lys
    450


<210>  90
<211>  446
<212>  PRT
<213>  Homo Sapiens

<400>  90

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Leu Lys Lys Pro Gly Glu
1               5                   10                  15


Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Arg Phe Thr Ser Tyr
            20                  25                  30


Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
        35                  40                  45


Gly Ile Ile Tyr Pro Asp Asp Ser Asp Thr Arg Tyr Ser Pro Ser Phe
    50                  55                  60


Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
65                  70                  75                  80


Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
                85                  90                  95


Ala Arg Gln Lys Ser Tyr Gly Tyr Ser Tyr Phe Asp Tyr Trp Gly Gln
            100                 105                 110


Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
        115                 120                 125


Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala
    130                 135                 140


Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145                 150                 155                 160


Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
                165                 170                 175


Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
            180                 185                 190


Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His Lys
        195                 200                 205
```

```
Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys Val
    210                 215                 220

Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe
225                 230                 235                 240

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
                245                 250                 255

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
            260                 265                 270

Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
        275                 280                 285

Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val
    290                 295                 300

Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
305                 310                 315                 320

Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
                325                 330                 335

Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
            340                 345                 350

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
        355                 360                 365

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
    370                 375                 380

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser Asp
385                 390                 395                 400

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
                405                 410                 415

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
            420                 425                 430

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
```

<210> 91
<211> 447
<212> PRT
<213> Homo Sapiens

<400> 91

```
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1               5                  10                  15

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
            20                  25                  30

Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
        35                  40                  45

Gly Ile Ile Tyr Pro Asp Asp Ser Asp Ala Arg Tyr Ser Pro Ser Phe
    50                  55                  60

Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Asn Thr Ala Tyr
65                  70                  75                  80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
                85                  90                  95

Ala Arg Gln Gly Tyr Gly Ser Gly Trp Gly Tyr Phe Asp Tyr Trp Gly
            100                 105                 110

Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
        115                 120                 125

Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
    130                 135                 140

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145                 150                 155                 160

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
                165                 170                 175

Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
            180                 185                 190

Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His
        195                 200                 205

Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu Arg Lys Cys Cys
    210                 215                 220

Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala Gly Pro Ser Val
225                 230                 235                 240

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
                245                 250                 255

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
            260                 265                 270
```

Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
        275   280   285

Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser
    290   295   300

Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
305   310   315   320

Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile
                325   330   335

Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
            340   345   350

Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu
        355   360   365

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
    370   375   380

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Met Leu Asp Ser
385   390   395   400

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
                405   410   415

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
            420   425   430

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435   440   445

<210> 92
<211> 453
<212> PRT
<213> Homo Sapiens

<400> 92

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1   5   10   15

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
            20   25   30

Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
        35   40   45

Gly Ile Ile Tyr Pro Gly Asp Ser Asp Ile Arg Tyr Ser Pro Ser Phe
    50   55   60

Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr

65 70 75 80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Ala Arg Gln Gly Leu Ala Val Ala Gly Thr Ser Tyr Tyr Tyr Tyr Tyr
100 105 110

Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala
115 120 125

Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser
130 135 140

Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
145 150 155 160

Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly
165 170 175

Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu
180 185 190

Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr
195 200 205

Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr
210 215 220

Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro
225 230 235 240

Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
245 250 255

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
260 265 270

Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
275 280 285

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
290 295 300

Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu
305 310 315 320

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala
325 330 335

Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro

340 345 350

Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
355 360 365

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
370 375 380

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
385 390 395 400

Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
405 410 415

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
420 425 430

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
435 440 445

Leu Ser Pro Gly Lys
450

<210> 93
<211> 451
<212> PRT
<213> Homo Sapiens

<400> 93

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 Tyr
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 Cys 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 Asp Arg Ala Val Ala Gly Tyr Tyr Tyr Gly Met
100 105 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr
115 120 125

```
Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser
    130                 135                 140

Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
145                 150                 155                 160

Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
                165                 170                 175

Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
            180                 185                 190

Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys
        195                 200                 205

Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val Glu
    210                 215                 220

Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val Ala
225                 230                 235                 240

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270

Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe
    290                 295                 300

Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile
                325                 330                 335

Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
        355                 360                 365

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400
```

```
Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415


Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430


His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445


Pro Gly Lys
    450


<210>  94
<211>  112
<212>  PRT
<213>  Homo Sapiens

<400>  94

Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1               5                   10                  15


Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Ser
            20                  25                  30


Asp Gly Asn Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser
        35                  40                  45


Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Asp Ser Gly Val Pro
    50                  55                  60


Asp Arg Phe Asn 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 Ser
                85                  90                  95


Thr His Trp Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105                 110


<210>  95
<211>  112
<212>  PRT
<213>  Homo Sapiens

<400>  95

Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1               5                   10                  15


Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Ser
            20                  25                  30
```

```
Asp Gly Asn Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser
        35                  40                  45


Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Asp 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 Ile Gln Gly
                85                  90                  95


Thr His Trp Pro Thr Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105                 110


<210>  96
<211>  112
<212>  PRT
<213>  Homo Sapiens

<400>  96

Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1               5                   10                  15


Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Ser
            20                  25                  30


Asp Gly Asn Thr Tyr Leu Asn Trp Leu Gln Gln Arg Pro Gly Gln Ser
        35                  40                  45


Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Asp 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 Gly
                85                  90                  95


Thr His Trp Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105                 110


<210>  97
<211>  112
<212>  PRT
<213>  Homo Sapiens

<400>  97

Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly
1               5                   10                  15


Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu His Ser
            20                  25                  30
```

```
Asp Gly Lys Thr Tyr Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Pro
        35                  40                  45

Pro Gln Leu Leu Ile Tyr Glu Val Ser Asn Arg Phe 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 Gly
                85                  90                  95

Ile Gln Leu Pro Cys Ser Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
            100                 105                 110
```

<210> 98
<211> 112
<212> PRT
<213> Homo Sapiens

<400> 98

```
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly
1               5                   10                  15

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu His Ser
            20                  25                  30

Asp Gly Lys Thr Tyr Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Pro
        35                  40                  45

Pro Gln Leu Leu Ile Tyr Glu Val Ser Asn Arg Phe 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 Ser
                85                  90                  95

Ile Gln Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105                 110
```

<210> 99
<211> 112
<212> PRT
<213> Homo Sapiens

<400> 99

```
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly
1               5                   10                  15
```

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu His Ser
20 25 30

Asp Gly Lys Thr Tyr Leu Tyr Trp Phe Leu Gln Lys Pro Gly Gln Pro
35 40 45

Pro Gln Pro Leu Ile Tyr Glu Val Ser Asn Arg Phe 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 Ser
85 90 95

Ile Gln Leu Pro Ile Thr Phe Gly His Gly Thr Arg Leu Glu Ile Lys
100 105 110

<210> 100
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 100

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 Ala 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 Val 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 Gln Asn Tyr Asn Ser Ala Pro Phe
85 90 95

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 101
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 101

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 Ile Cys Arg Ala Ser Gln Gly Ile Ser Asn Asp
            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 Gln Lys Tyr Asn Ser Val Pro Leu
                85                  90                  95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105


<210>  102
<211>  112
<212>  PRT
<213>  Homo Sapiens

<400>  102

Asn Ile Val Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
1               5                   10                  15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
            20                  25                  30

Asp Gly Asn Thr Tyr Leu Ser Trp Leu Gln Gln Arg Pro Gly Gln Pro
        35                  40                  45

Pro Arg Leu Leu Ile Tyr Lys Ile Ser Asn Arg Phe Ser Gly Val Pro
    50                  55                  60

Asp Arg Phe Ser Gly Ser Gly Ala 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

Thr Gln Phe Pro His Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100                 105                 110


<210>  103
<211>  112
<212>  PRT
<213>  Homo Sapiens

<400>  103
```

```
Glu Ile Val Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
1               5                  10                  15


Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
            20                  25                  30


Asp Gly Asn Thr Tyr Leu Ser Trp Leu Gln Gln Arg Pro Gly Gln Pro
        35                  40                  45


Pro Arg Leu Leu Ile Tyr Lys Ile Ser Asn Arg Phe Ser Gly Val Pro
    50                  55                  60


Asp Arg Phe Ser Gly Thr Gly Ala 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


Thr Gln Phe Pro His Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105                 110


<210>  104
<211>  108
<212>  PRT
<213>  Homo Sapiens

<400>  104

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
1               5                  10                  15


Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Thr Val Ile Ser Ser
            20                  25                  30


Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
        35                  40                  45


Ile Ser Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser
    50                  55                  60


Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu
65                  70                  75                  80


Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro
                85                  90                  95


Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100                 105


<210>  105
<211>  106
<212>  PRT
<213>  Homo Sapiens
```

<400> 105

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Arg Leu
20 25 30

Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr
35 40 45

Gly Ala Ser Arg Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu
65 70 75 80

Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Arg Ser
85 90 95

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 106
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 106

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 Arg Asn Asp
20 25 30

Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg 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 Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Pro
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 107
<211> 113
<212> PRT

<213> Homo Sapiens

<400> 107

```
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 Val Trp Tyr Gln Gln Lys Pro Gly Gln
        35                  40                  45

Pro Pro Lys Leu Phe Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50                  55                  60

Pro Asp Arg Phe Thr 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 Phe Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
            100                 105                 110

Lys
```

<210> 108
<211> 113
<212> PRT
<213> Homo Sapiens

<400> 108

```
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 Gln Gln
                85                  90                  95

Tyr Tyr Ser Thr Thr Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
```

100 105 110

Lys

<210> 109
<211> 113
<212> PRT
<213> Homo Sapiens

<400> 109

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 Asn 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 Phe Cys Gln Gln
85 90 95

Tyr Tyr Gly Thr Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
100 105 110

Lys

<210> 110
<211> 113
<212> PRT
<213> Homo Sapiens

<400> 110

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 Asn 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 Phe Cys Gln Gln
85 90 95

Tyr Tyr Gly Thr Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
100 105 110

Lys

<210> 111
<211> 113
<212> PRT
<213> Homo Sapiens

<400> 111

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Thr 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 Gly 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 Ile Ser Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
100 105 110

Lys

<210> 112
<211> 113
<212> PRT
<213> Homo Sapiens

<400> 112

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 Asn

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 Asp Asp Val Ala Val Tyr Tyr Cys Gln Gln
85 90 95

Tyr Tyr Ser Thr Thr Trp Thr Phe Gly Pro Gly Thr Lys Val Glu Ile
100 105 110

Lys

<210> 113
<211> 113
<212> PRT
<213> Homo Sapiens

<400> 113

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 Asn
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 Asp Asp Val Ala Val Tyr Tyr Cys Gln Gln
85 90 95

Tyr Tyr Ser Thr Thr Trp Thr Phe Gly Pro Gly Thr Lys Val Glu Ile
100 105 110

Lys

<210> 114
<211> 113

<212> PRT
<213> Homo Sapiens

<400> 114

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 Val Leu Ile Tyr Trp Ala Ser Thr Arg Lys 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 Gly Leu Gln Ala Glu Asp Val Ala Leu Tyr Tyr Cys Gln Gln
85 90 95

Tyr Tyr Ser Thr Met Phe Ser Phe Gly Gln Gly Thr Lys Leu Glu Ile
100 105 110

Lys

<210> 115
<211> 113
<212> PRT
<213> Homo Sapiens

<400> 115

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 Asp 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 Phe Tyr Cys His Gln
85 90 95

Tyr Tyr Ser Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Ala Ile
100 105 110

Lys

<210> 116
<211> 113
<212> PRT
<213> Homo Sapiens

<400> 116

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 Ile Leu Tyr Arg
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 Ala 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 Phe Cys Gln Gln
85 90 95

Tyr Phe Ile Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile
100 105 110

Lys

<210> 117
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 117

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 His Tyr
20 25 30

Leu Ala Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile
35 40 45

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Lys 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 Tyr Asn Asn Tyr Pro Phe
                85                  90                  95


Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100                 105


<210>  118
<211>  107
<212>  PRT
<213>  Homo Sapiens

<400>  118

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15


Asp Arg Val Ala Ile Thr Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr
            20                  25                  30


Leu Ala Trp Leu Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser 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 Tyr Asn Thr Tyr Pro Phe
                85                  90                  95


Thr Phe Gly Pro Gly Thr Lys Met Asp Ile Lys
            100                 105


<210>  119
<211>  108
<212>  PRT
<213>  Homo Sapiens

<400>  119

Glu Ile Val Met Thr Gln Ser Pro Ala Thr Leu Ser Val Ser Pro Gly
1               5                   10                  15


Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Asn
            20                  25                  30


Leu Ala Trp Tyr Gln Gln Asp Pro Gly Gln Ala Pro Arg Leu Leu Ile
        35                  40                  45
```

```
Tyr Gly Ala Ser Arg Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Ser
65                  70                  75                  80

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln His Asn Asn Trp Pro Pro
                85                  90                  95

Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100                 105
```

<210> 120
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 120

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
1               5                   10                  15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Ser Arg Trp
            20                  25                  30

Leu Ala 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 Ala Asn Ser Phe Pro Pro
                85                  90                  95

Thr Phe Gly Gln Gly Thr Lys Val Glu Phe Lys
            100                 105
```

<210> 121
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 121

```
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 Thr Tyr
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Phe 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 Ala Tyr Tyr Cys Gln Gln Ser His Ser Ala Pro Phe
                85                  90                  95


Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100                 105


<210>  122
<211>  106
<212>  PRT
<213>  Homo Sapiens

<400>  122

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
1               5                   10                  15


Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Thr Ile Ser Ile 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 Leu Thr
                85                  90                  95


Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105


<210>  123
<211>  107
<212>  PRT
<213>  Homo Sapiens

<400>  123

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 Arg Ser Tyr
            20                  25                  30
```

```
Leu Asn Trp Tyr Gln Gln Arg Pro Gly Asn Ala Pro Lys Leu Leu Ile
        35                  40                  45


Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Val Ser Gly
    50                  55                  60


Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Arg Ser Leu Gln Pro
65                  70                  75                  80


Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Ile Pro Leu
                85                  90                  95


Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105


<210>  124
<211>  107
<212>  PRT
<213>  Homo Sapiens

<400>  124

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Arg Ser Ala Ser Val Gly
1               5                   10                  15


Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Thr Ile Ser Arg 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 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 Leu Ser Ser Leu Gln Pro
65                  70                  75                  80


Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ile Tyr Ser Thr Ser Ile
                85                  90                  95


Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105


<210>  125
<211>  107
<212>  PRT
<213>  Homo Sapiens

<400>  125

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 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 Glu 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 Ile Thr Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Ile
            100                 105
```

<210> 126
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 126

```
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 Arg Tyr
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Thr 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 Asn Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Phe Thr Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105
```

<210> 127
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 127

```
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 Thr 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 Phe Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Phe Ser Pro Ile
85 90 95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 128
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 128

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 Thr 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 Leu Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Ala Ser Tyr Tyr Cys Gln Gln Ser Phe Tyr Thr Pro Ile
85 90 95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 129
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 129

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 Thr Val 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 Phe Thr Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105


<210>  130
<211>  107
<212>  PRT
<213>  Homo Sapiens

<400>  130

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 Thr 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 Ser Tyr Tyr Cys Gln Gln Ser Phe Tyr Ala Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105


<210>  131
<211>  107
<212>  PRT
<213>  Homo Sapiens

<400>  131
```

```
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 Thr 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 Phe Thr Pro Ile
                85                  90                  95


Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105


<210>  132
<211>  107
<212>  PRT
<213>  Homo Sapiens

<400>  132

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 Gln Ala Ser Gln Asp Ile Ser Asn Tyr
            20                  25                  30


Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45


Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60


Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80


Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Tyr Leu Pro Phe
                85                  90                  95


Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100                 105


<210>  133
<211>  107
<212>  PRT
<213>  Homo Sapiens
```

<400> 133

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 Gln Ala Ser Gln Asp Ile Ser Asn Ser
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Glu Leu Leu Ile
35 40 45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Cys Asp Asp Leu Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 134
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 134

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 Gln Ala Ser Gln Asp Ile Ser Asp Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln His Tyr Asp Asn Leu Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 135
<211> 107
<212> PRT

<213> Homo Sapiens

<400> 135

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                  10                  15

Asp Arg Val Ala Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Tyr
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu Pro Leu
                85                  90                  95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105
```

<210> 136
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 136

```
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 Gln Ala Ser Gln Asp Ile Ser Asn Ser
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Asp Ala Ser Ile Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Glu Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Cys Asp Ile Leu Pro Leu
                85                  90                  95

Ser Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105
```

<210> 137

<211> 107
<212> PRT
<213> Homo Sapiens

<400> 137

```
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 Gln Ala Ser Gln Asp Ile Ser Asn Ser
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu Pro Leu
                85                  90                  95

Ala Phe Gly Gly Gly Thr Lys Val Glu Ile Arg
            100                 105
```

<210> 138
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 138

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                  10                  15

Asp Gly Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Thr Asn Tyr
            20                  25                  30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Ser Leu Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100                 105
```

<210> 139
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 139

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 Gln Ala Ser Gln Asp Ile Ser Asn Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Leu Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

His Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu Pro Ile
85 90 95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 140
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 140

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 Gln Ala Ser Gln Asp Ile Ser Asp Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln His Tyr Asp Asn Leu Pro Ile
85 90 95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys

100 105

<210> 141
<211> 107
<212> PRT
<213> Homo Sapiens

<400> 141

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 Gln Ala Ser Gln Asp Ile Ser Asn Ser
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln His Tyr Asp Asn Leu Pro Ile
85 90 95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 142
<211> 120
<212> PRT
<213> Homo Sapiens

<400> 142

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 Ser Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu
50 55 60

Gln Asp 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 Glu Asp Asn Trp Asn Tyr Gly Phe Phe Asp Tyr Trp Gly Gln
            100                 105                 110


Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210>  143
<211>  117
<212>  PRT
<213>  Homo Sapiens

<400>  143

Gln Val His Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15


Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr Thr Phe Thr Gly His
            20                  25                  30


Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45


Gly Trp Ile Asn Pro Asn Ser Gly Gly Thr Asn Cys 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 Ser Ile Ala Val Ala Leu Asp Tyr Trp Gly Gln Gly Thr Leu
            100                 105                 110


Val Thr Val Ser Ser
        115


<210>  144
<211>  117
<212>  PRT
<213>  Homo Sapiens

<400>  144

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 Trp Ile Asn Pro Asn Ser Gly Gly Thr Asn His Thr 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 Ser Ile Ala Val Ala Leu Asp Tyr Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser
115

<210> 145
<211> 122
<212> PRT
<213> Homo Sapiens

<400> 145

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Arg Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Val Ser Gly Tyr Thr Leu Thr Glu Leu
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Met
35 40 45

Gly Ser Phe Asp Pro Glu Asp Gly Glu Thr Ile Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Leu Glu Asp Thr Ser Thr Asp Thr Ala Tyr
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Thr Glu Gly Asp Gly Gly 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> 146
<211> 122
<212> PRT
<213> Homo Sapiens

<400> 146

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 Met Tyr Ser Ser Gly Trp Tyr Gly Val Phe Asp Tyr Trp
            100                 105                 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210>  147
<211>  123
<212>  PRT
<213>  Homo Sapiens

<400>  147

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 Val Leu 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 Val Tyr Ser Ser Gly Trp Ser Phe Tyr Gly Met Asp Val
            100                 105                 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 148
<211> 118
<212> PRT
<213> Homo Sapiens

<400> 148

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1 5 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Gly
20 25 30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
35 40 45

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
50 55 60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn 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 His Arg Arg Glu Leu Pro Phe Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 149
<211> 118
<212> PRT
<213> Homo Sapiens

<400> 149

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1 5 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Gly
20 25 30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
35 40 45

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
50 55 60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Thr Gln Val
65 70 75 80

Val Leu Thr Val Thr Asp Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
85 90 95

```
Cys Ala His Arg Asn Trp Thr Pro Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110


Leu Val Thr Val Ser Ser
        115


<210>  150
<211>  118
<212>  PRT
<213>  Homo Sapiens

<400>  150

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1               5                   10                  15


Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Asn Thr Gly
            20                  25                  30


Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35                  40                  45


Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
    50                  55                  60


Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn 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 His Arg Leu Glu Leu Pro Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110


Leu Val Thr Val Ser Ser
        115


<210>  151
<211>  118
<212>  PRT
<213>  Homo Sapiens

<400>  151

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1               5                   10                  15


Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Gly
            20                  25                  30


Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35                  40                  45
```

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
50 55 60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn Gln Val
65 70 75 80

Val Leu Thr Met Thr Asn Leu Asp Pro Val Asp Thr Ala Thr Tyr Tyr
85 90 95

Cys Ala His Arg Arg Glu Val Pro Phe Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 152
<211> 118
<212> PRT
<213> Homo Sapiens

<400> 152

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1 5 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Gly
20 25 30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
35 40 45

Trp Leu Ala Leu Ile Tyr Trp Asn Val Glu Lys Arg Tyr Ser Pro Ser
50 55 60

Leu Arg Ser Arg Leu Thr Ile Thr Lys Ala Thr Ser Lys Asn 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 His Arg His Thr Asn Pro Phe Glu Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 153
<211> 118
<212> PRT
<213> Homo Sapiens

<400> 153

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1 5 10 15

```
Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Gly
            20                  25                  30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35                  40                  45

Trp Leu Ala Leu Ile Tyr Trp Asn Asp Asp Lys Arg Tyr Ser Pro Ser
    50                  55                  60

Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn 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 His Arg Gly Glu Leu Pro Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser
        115


<210>  154
<211>  121
<212>  PRT
<213>  Homo Sapiens

<400>  154

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 Pro Phe Ser Arg Tyr
            20                  25                  30

Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ser Ala Ile Ser 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 Arg Val Gly Ala Thr Pro Asp Ala Phe Asp Ile Trp Gly
            100                 105                 110

Gln Gly Thr Met Val Thr Val Ser Ser
        115                 120
```

<210> 155
<211> 128
<212> PRT
<213> Homo Sapiens

<400> 155

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 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 Glu Gly Ile Ala Val Ala Gly Thr Ala Glu Tyr Tyr Tyr Tyr
100 105 110

Tyr Ala Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 156
<211> 125
<212> PRT
<213> Homo Sapiens

<400> 156

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 Glu Gly Ile Ala Ala Arg Asp Ser Tyr Tyr Tyr Tyr Ala Met
100 105 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 157
<211> 125
<212> PRT
<213> Homo Sapiens

<400> 157

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 Thr 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 Glu Tyr Tyr Cys
85 90 95

Ala Lys Glu Gly Ile Ala Gly Arg Asp Ser 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> 158
<211> 123
<212> PRT
<213> Homo Sapiens

<400> 158

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 Phe Ile Ser Asp Asp Gly Ser Thr Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60


Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Met 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 Tyr Tyr Asp Ser Ser Gly Tyr Tyr Tyr Gly Phe Asp Tyr
            100                 105                 110


Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210>  159
<211>  114
<212>  PRT
<213>  Homo Sapiens

<400>  159

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 Asn Val Ile Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
            100                 105                 110


Ser Ser



<210>  160
<211>  120
<212>  PRT
<213>  Homo Sapiens

<400>  160

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

Asp 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 Ile 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 Gly Ala Thr Gly Ala Glu Tyr Phe Gln His Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 161
<211> 118
<212> PRT
<213> Homo Sapiens

<400> 161

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 Leu Leu Trp Phe Gly Glu Thr Phe Asp Tyr Trp Gly Gln Gly Ser
100 105 110

Leu Val Thr Val Ser Pro
115

<210> 162
<211> 115
<212> PRT
<213> Homo Sapiens

<400> 162

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 Ser 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 Asn Leu Pro Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 163
<211> 123
<212> PRT
<213> Homo Sapiens

<400> 163

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 Asp Asp Gly Ser Asn Gln Tyr Tyr Thr Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Val Ser Arg Asp Asn Ser Lys Asn Thr 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 Ser His Tyr Gly Gly Asp Tyr Asp Tyr Tyr Gly Met Asp Val
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 164
<211> 120
<212> PRT
<213> Homo Sapiens

<400> 164

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 Arg 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 Asp Gly Trp Gln Gln Gln Ala Pro Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 165
<211> 118
<212> PRT
<213> Homo Sapiens

<400> 165

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 His
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 Asn Tyr Ala Asp Ser Val
    50                  55                  60

Arg Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Asp
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 Trp Gly Ile Ser Ala Pro Phe Asp Cys Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser
        115
```

<210> 166
<211> 115
<212> PRT
<213> Homo Sapiens

<400> 166

```
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 Ala Tyr
            20                  25                  30

Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45

Ser Tyr Ile Ser Ser Ser Gly Arg Thr 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 Phe
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Leu Trp Ala Pro Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100                 105                 110

Val Ser Ser
        115
```

<210> 167
<211> 125
<212> PRT
<213> Homo Sapiens

<400> 167

```
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


Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45


Ser His Ile Ser Ser Ser Ser Arg Thr Ile Tyr Tyr Ala Asp Ser Val
    50                  55                  60


Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Val Tyr
65                  70                  75                  80


Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95


Ala Arg Asp Gly Tyr Asn Trp Asn Gly Gly Gly Asn Tyr Tyr Gly Met
            100                 105                 110


Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125


<210>  168
<211>  125
<212>  PRT
<213>  Homo Sapiens

<400>  168

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


Ser Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45


Ser His Ile Ser Arg Ser Ser Arg Thr 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 Asp Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95


Ala Arg Asp Gly Tyr Asn Trp Asn Asn Gly Gly 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> 169
<211> 118
<212> PRT
<213> Homo Sapiens

<400> 169

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 Val 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 His Ser 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 Asn Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Gly Pro Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr
100 105 110

Thr Val Thr Val Ser Ser
115

<210> 170
<211> 127
<212> PRT
<213> Homo Sapiens

<400> 170

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 Arg 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 His Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Asn Met 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 Ala Leu Arg Gly Ile Val Leu Met Val Tyr Val Leu Gly
            100                 105                 110


Ala Leu Asp Ile Trp Gly Gln Gly Thr Lys Val Thr Val Ser Ser
        115                 120                 125


<210>  171
<211>  127
<212>  PRT
<213>  Homo Sapiens

<400>  171

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 Asp Glu Thr Val Val Arg Gly Leu Ile Arg Tyr Cys Tyr
            100                 105                 110


Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125


<210>  172
<211>  122
<212>  PRT
<213>  Homo Sapiens

<400>  172

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1               5                   10                  15


Thr Leu Ser Leu Asn 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 His Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Ile Thr Ile Ser Ala Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

Ser Leu Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Asp Arg Gly Gly Gly Asp Tyr Gly Arg Met Asp Val Trp
100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 173
<211> 122
<212> PRT
<213> Homo Sapiens

<400> 173

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1 5 10 15

Thr Leu Ser Leu Asn 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 His Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Ile Thr Ile Ser Ala Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

Ser Leu Lys Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Asp Arg Gly Gly Gly Asp Tyr Gly Arg Met Asp Val Trp
100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 174
<211> 119
<212> PRT
<213> Homo Sapiens

<400> 174

```
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 His Ser Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
    50                  55                  60


Leu Lys Ser Arg Ile Thr Lys 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 Ser Asn Asn Tyr Gly Cys Phe Ala Leu Trp Gly Arg Gly
            100                 105                 110


Thr Leu Val Thr Val Ser Ser
        115


<210>  175
<211>  119
<212>  PRT
<213>  Homo Sapiens

<400>  175

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 His Ser Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
    50                  55                  60


Leu Lys Ser Arg Ile Thr Lys 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 Ser Asn Asn Tyr Gly Cys Phe Ala Leu Trp Gly Arg Gly
            100                 105                 110
```

Thr Leu Val Thr Val Ser Ser
115

<210> 176
<211> 133
<212> PRT
<213> Homo Sapiens

<400> 176

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 His 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 Ser Gly Tyr Asn Tyr Gly Leu Tyr Tyr Tyr Asp Ser Ser Gly
100 105 110

Tyr Pro Ser Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr
115 120 125

Val Thr Val Ser Ser
130

<210> 177
<211> 125
<212> PRT
<213> Homo Sapiens

<400> 177

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

Asp Tyr Tyr Trp Asn Trp Val Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Gly 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 Phe Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Phe
                85                  90                  95


Cys Ala Arg Thr Tyr Tyr Asp Ile Leu Thr Gly Tyr Pro Phe Tyr Phe
            100                 105                 110


Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120                 125


<210>  178
<211>  125
<212>  PRT
<213>  Homo Sapiens

<400>  178

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


Asp Tyr Tyr Trp Asn Trp Val Arg Gln His Pro Gly Lys Gly Leu Glu
        35                  40                  45


Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Gly 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 Phe Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Phe
                85                  90                  95


Cys Ala Arg Thr Tyr Tyr Asp Ile Leu Thr Gly Tyr Pro Phe Tyr Phe
            100                 105                 110


Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120                 125


<210>  179
<211>  120
<212>  PRT
<213>  Homo Sapiens

<400>  179

Gln Val Gln Leu Gln Gln Trp Gly Ala Gly Leu Leu Lys Pro Ser Glu
1               5                   10                  15
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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 Gly Tyr Ser Ser Ser Trp Tyr Trp Phe Asp Pro Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210>  180
<211>  120
<212>  PRT
<213>  Homo Sapiens

<400>  180

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 Gly Tyr Ser Ser Ser Trp Phe Trp Phe Asp Pro Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210>  181
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<211> 123
<212> PRT
<213> Homo Sapiens

<400> 181

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 Ser Tyr
20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Ala Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Arg Ile Tyr Thr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys
50 55 60

Ser Arg Val Thr Met 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 Asp Gly Tyr Ser Tyr Gly His Tyr Tyr Tyr Tyr Gly Met Asp Val
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 182
<211> 126
<212> PRT
<213> Homo Sapiens

<400> 182

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 Val Ser Ser Gly
20 25 30

Gly Ser Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Ser Ile Val Thr Ser Arg 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 Ser Ala Leu Arg Tyr Phe Asp Trp Leu Phe Ser Asp Val
            100                 105                 110


Ser Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
        115                 120                 125


<210>  183
<211>  120
<212>  PRT
<213>  Homo Sapiens

<400>  183

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Leu Lys Lys Pro Gly Glu
1               5                   10                  15


Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Arg Phe Thr Ser Tyr
            20                  25                  30


Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
        35                  40                  45


Gly Ile Ile Tyr Pro Asp Asp Ser Asp Thr Arg Tyr Ser Pro Ser Phe
    50                  55                  60


Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
65                  70                  75                  80


Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
                85                  90                  95


Ala Arg Gln Lys Ser Tyr Gly Tyr Ser Tyr Phe Asp Tyr Trp Gly Gln
            100                 105                 110


Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210>  184
<211>  121
<212>  PRT
<213>  Homo Sapiens

<400>  184

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1               5                   10                  15


Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
            20                  25                  30


Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
        35                  40                  45


Gly Ile Ile Tyr Pro Asp Asp Ser Asp Ala Arg Tyr Ser Pro Ser Phe
```

50 55 60

Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Asn Thr Ala Tyr
65 70 75 80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Ala Arg Gln Gly Tyr Gly Ser Gly Trp Gly Tyr Phe Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 185
<211> 127
<212> PRT
<213> Homo Sapiens

<400> 185

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1 5 10 15

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
20 25 30

Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met
35 40 45

Gly Ile Ile Tyr Pro Gly Asp Ser Asp Ile Arg Tyr Ser Pro Ser Phe
50 55 60

Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr
65 70 75 80

Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Ala Arg Gln Gly Leu Ala Val Ala Gly Thr Ser Tyr 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> 186
<211> 125
<212> PRT
<213> Homo Sapiens

<400> 186

Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1 5 10 15

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Thr Leu Ser Leu Thr Cys Ala Ile Ser Gly Asp Ser Val Ser Ser Tyr
            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 Cys 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 Asp Arg Ala Val Ala Gly 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>  187
<211>  107
<212>  PRT
<213>  Homo Sapiens

<400>  187

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
1               5                   10                  15

Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
            20                  25                  30

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
        35                  40                  45

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
    50                  55                  60

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
65                  70                  75                  80

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
                85                  90                  95

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
            100                 105


<210>  188
<211>  326
<212>  PRT
<213>  Homo Sapiens
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<400> 188

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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 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
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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

<210> 189
<211> 16
<212> PRT
<213> Homo Sapiens

<400> 189

Arg Ser Ser Gln Ser Leu Val Tyr Ser Asp Gly Asn Thr Tyr Leu Asn
1 5 10 15

<210> 190
<211> 16
<212> PRT
<213> Homo Sapiens

<400> 190

Lys Ser Ser Gln Ser Leu Leu His Ser Asp Gly Lys Thr Tyr Leu Tyr
1 5 10 15

<210> 191
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 191

Arg Ala Ser Gln Gly Ile Ala Asn Tyr Leu Ala
1 5 10

<210> 192
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 192

Arg Ala Ser Gln Gly Ile Ser Asn Asp Leu Ala
1 5 10

<210> 193
<211> 16
<212> PRT
<213> Homo Sapiens

<400> 193

Arg Ser Ser Gln Ser Leu Val His Ser Asp Gly Asn Thr Tyr Leu Ser
1 5 10 15

<210> 194
<211> 12
<212> PRT
<213> Homo Sapiens

<400> 194

Arg Ala Ser Gln Thr Val Ile Ser Ser Tyr Leu Ala
1 5 10

<210> 195
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 195

Arg Ala Ser Gln Ser Val Ser Arg Leu Ala
1 5 10

<210> 196
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 196

Arg Ala Ser Gln Gly Ile Arg Asn Asp Leu Gly
1 5 10

<210> 197
<211> 17
<212> PRT
<213> Homo Sapiens

<400> 197

Lys Ser Ser Gln Ser Val Leu Tyr Ser Ser Asn Asn Lys Asn Tyr Leu
1 5 10 15

Val

<210> 198
<211> 17
<212> PRT
<213> Homo Sapiens

<400> 198

Lys Ser Ser Gln Ser Val Leu Tyr Ser Ser Asn Asn Lys Asn Tyr Leu
1 5 10 15

Ala

<210> 199
<211> 17
<212> PRT
<213> Homo Sapiens

<400> 199

Lys Ser Ser Gln Asn Val Leu Tyr Ser Ser Asn Asn Lys Asn Tyr Leu
1 5 10 15

Ala

<210> 200
<211> 17
<212> PRT
<213> Homo Sapiens

<400> 200

Lys Ser Ser Gln Ser Val Leu Tyr Asn Ser Asn Asn Lys Asn Tyr Leu
1 5 10 15

Ala

<210> 201
<211> 17
<212> PRT
<213> Homo Sapiens

<400> 201

Lys Ser Ser Gln Ser Val Leu Asp Ser Ser Asn Asn Lys Asn Tyr Leu
1 5 10 15

Ala

<210> 202
<211> 17
<212> PRT
<213> Homo Sapiens

<400> 202

Lys Ser Ser Gln Ser Ile Leu Tyr Arg Ser Asn Asn Lys Asn Tyr Leu
1 5 10 15

Ala

<210> 203
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 203

Arg Ala Ser Gln Asp Ile Ser His Tyr Leu Ala
1   5   10

<210> 204
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 204

Arg Ala Ser Gln Asp Ile Ser Asn Tyr Leu Ala
1   5   10

<210> 205
<211> 11
<212> PRT
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<400> 205

Arg Ala Ser Gln Ser Val Ser Ser Asn Leu Ala
1   5   10

<210> 206
<211> 11
<212> PRT
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<400> 206

Arg Ala Ser Gln Asp Ile Ser Arg Trp Leu Ala
1   5   10

<210> 207
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 207

Arg Ala Ser Gln Ser Ile Ser Thr Tyr Leu Asn
1   5   10

<210> 208
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<212> PRT
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<400> 208

Arg Ala Ser Gln Thr Ile Ser Ile Tyr Leu Asn
1   5   10

<210> 209
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<400> 209

Arg Ala Ser Gln Ser Ile Arg Ser Tyr Leu Asn
1   5   10

<210> 210
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<400> 210

Arg Ala Ser Gln Thr Ile Ser Arg Tyr Leu Asn
1   5   10

<210> 211
<211> 11
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<213> Homo Sapiens

<400> 211

Arg Ala Ser Gln Arg Ile Ser Ser Tyr Leu Asn
1   5   10

<210> 212
<211> 11
<212> PRT
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<400> 212

Arg Ala Ser Gln Ser Ile Ser Arg Tyr Leu Asn
1   5   10

<210> 213
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 213

Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn
1   5   10

<210> 214
<211> 11
<212> PRT
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<400> 214

Gln Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn
1   5   10

<210> 215
<211> 11
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<400> 215

Gln Ala Ser Gln Asp Ile Ser Asn Ser Leu Asn
1   5   10

<210> 216
<211> 11
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<213> Homo Sapiens

<400> 216

Gln Ala Ser Gln Asp Ile Ser Asp Tyr Leu Asn
1 5 10

<210> 217
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 217

Gln Ala Ser Gln Asp Ile Thr Asn Tyr Leu Asn
1 5 10

<210> 218
<211> 7
<212> PRT
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<400> 218

Lys Val Ser Asn Trp Asp Ser
1 5

<210> 219
<211> 7
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<400> 219

Glu Val Ser Asn Arg Phe Ser
1 5

<210> 220
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<212> PRT
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<400> 220

Val Ala Ser Thr Leu Gln Ser
1 5

<210> 221
<211> 7
<212> PRT
<213> Homo Sapiens

<400> 221

Ala Ala Ser Thr Leu Gln Ser
1 5

<210> 222
<211> 7

<212> PRT
<213> Homo Sapiens

<400> 222

Lys Ile Ser Asn Arg Phe Ser
1   5

<210> 223
<211> 7
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<400> 223

Gly Ala Ser Ser Arg Ala Thr
1   5

<210> 224
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<400> 224

Gly Ala Ser Arg Arg Ala Thr
1   5

<210> 225
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<400> 225

Ala Ala Ser Ser Leu Gln Ser
1   5

<210> 226
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<400> 226

Trp Ala Ser Thr Arg Glu Ser
1   5

<210> 227
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<400> 227

Trp Ala Ser Thr Arg Lys Ser
1   5

<210> 228
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<400> 228

Trp Ala Ser Ala Arg Glu Ser
1   5

<210> 229
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<400> 229

Ala Glu Ser Ser Leu Gln Ser
1   5

<210> 230
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<400> 230

Thr Ala Ser Ser Leu Gln Ser
1   5

<210> 231
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<400> 231

Thr Val Ser Ser Leu Gln Ser
1   5

<210> 232
<211> 7
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<400> 232

Asp Ala Ser Asn Leu Glu Thr
1   5

<210> 233
<211> 7
<212> PRT
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<400> 233

Asp Ala Ser Ile Leu Glu Thr
1   5

<210> 234
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 234

Met Gln Ser Thr His Trp Pro Ile Thr
1   5

<210> 235
<211> 9
<212> PRT
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<400> 235

Ile Gln Gly Thr His Trp Pro Thr Thr
1   5

<210> 236
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 236

Met Gln Gly Thr His Trp Pro Ile Thr
1   5

<210> 237
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 237

Met Gln Gly Ile Gln Leu Pro Cys Ser
1   5

<210> 238
<211> 9
<212> PRT
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<400> 238

Met Gln Ser Ile Gln Leu Pro Leu Thr
1   5

<210> 239
<211> 9
<212> PRT
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<400> 239

Met Gln Ser Ile Gln Leu Pro Ile Thr
1   5

<210> 240
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 240

Gln Asn Tyr Asn Ser Ala Pro Phe Thr

1 5

<210> 241
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 241

Gln Lys Tyr Asn Ser Val Pro Leu Thr
1 5

<210> 242
<211> 9
<212> PRT
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<400> 242

Met Gln Ala Thr Gln Phe Pro His Thr
1 5

<210> 243
<211> 9
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<400> 243

Gln Gln Tyr Gly Ser Ser Pro Arg Thr
1 5

<210> 244
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<212> PRT
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<400> 244

Gln Gln Tyr Gly Ser Ser Pro Arg Ser
1 5

<210> 245
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 245

Leu Gln His Asn Ser Tyr Pro Pro Thr
1 5

<210> 246
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<212> PRT
<213> Homo Sapiens

<400> 246

Gln Gln Tyr Tyr Ser Phe Pro Trp Thr
1 5

<210> 247
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<212> PRT
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<400> 247

Gln Gln Tyr Tyr Ser Thr Thr Trp Thr
1   5

<210> 248
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<212> PRT
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<400> 248

Gln Gln Tyr Tyr Gly Thr Pro Arg Thr
1   5

<210> 249
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<400> 249

Gln Gln Tyr Tyr Ser Ile Ser Arg Thr
1   5

<210> 250
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<400> 250

Gln Gln Tyr Tyr Ser Thr Met Phe Ser
1   5

<210> 251
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 251

His Gln Tyr Tyr Ser Thr Pro Leu Thr
1   5

<210> 252
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 252

Gln Gln Tyr Phe Ile Thr Pro Leu Thr
1   5

<210> 253

<211> 9
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<400> 253

Gln Gln Tyr Asn Asn Tyr Pro Phe Thr
1 5

<210> 254
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 254

Gln Gln Tyr Asn Thr Tyr Pro Phe Thr
1 5

<210> 255
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 255

Gln Gln His Asn Asn Trp Pro Pro Trp Thr
1 5 10

<210> 256
<211> 9
<212> PRT
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<400> 256

Gln Gln Ala Asn Ser Phe Pro Pro Thr
1 5

<210> 257
<211> 9
<212> PRT
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<400> 257

Gln Gln Ser His Ser Ala Pro Phe Thr
1 5

<210> 258
<211> 8
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<213> Homo Sapiens

<400> 258

Gln Gln Ser Tyr Ser Thr Leu Thr
1 5

<210> 259
<211> 9
<212> PRT

<213> Homo Sapiens

<400> 259

Gln Gln Ser Tyr Ser Ile Pro Leu Thr
1 5

<210> 260
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 260

Gln Gln Ile Tyr Ser Thr Ser Ile Thr
1 5

<210> 261
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 261

Gln Gln Ser Tyr Ile Thr Pro Ile Thr
1 5

<210> 262
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 262

Gln Gln Ser Tyr Phe Thr Pro Ile Thr
1 5

<210> 263
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 263

Gln Gln Ser Tyr Phe Ser Pro Ile Thr
1 5

<210> 264
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 264

Gln Gln Ser Phe Tyr Thr Pro Ile Thr
1 5

<210> 265
<211> 9
<212> PRT
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<400> 265

Gln Gln Ser Phe Tyr Ala Pro Ile Thr
1 5

<210> 266
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 266

Gln Gln Tyr Asp Tyr Leu Pro Phe Thr
1 5

<210> 267
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 267

Gln Gln Cys Asp Asp Leu Pro Leu Thr
1 5

<210> 268
<211> 9
<212> PRT
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<400> 268

Gln His Tyr Asp Asn Leu Pro Leu Thr
1 5

<210> 269
<211> 9
<212> PRT
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<400> 269

Gln Gln Tyr Asp Asn Leu Pro Leu Thr
1 5

<210> 270
<211> 9
<212> PRT
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<400> 270

Gln Gln Cys Asp Ile Leu Pro Leu Ser
1 5

<210> 271
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 271

Gln Gln Tyr Asp Asn Leu Pro Leu Ala
1   5

<210> 272
<211> 9
<212> PRT
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<400> 272

Gln Gln Tyr Asp Ser Leu Pro Ile Thr
1   5

<210> 273
<211> 9
<212> PRT
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<400> 273

Gln Gln Tyr Asp Asn Leu Pro Ile Thr
1   5

<210> 274
<211> 9
<212> PRT
<213> Homo Sapiens

<400> 274

Gln His Tyr Asp Asn Leu Pro Ile Thr
1   5

<210> 275
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 275

Gly Tyr Thr Phe Thr Ser Tyr Gly Ile Ser
1   5   10

<210> 276
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 276

Gly Tyr Thr Phe Thr Gly His Tyr Met His
1   5   10

<210> 277
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 277

Gly Tyr Thr Phe Thr Gly Tyr Tyr Met His
1   5   10

<210> 278
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 278

Gly Tyr Thr Leu Thr Glu Leu Ser Met His
1   5   10

<210> 279
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Gly

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Gly

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Gln Pro Ala Ser Ile Ser Cys
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Gln Pro Ala Ser Ile Ser Cys
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<400> 408

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 409
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<212> PRT
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<400> 409

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Phe Leu Ile Tyr
1 5 10 15

<210> 410
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<400> 410

Trp Tyr Gln Gln Arg Pro Gly Asn Ala Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 411
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<400> 411

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Val Leu Ile Tyr
1 5 10 15

<210> 412
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<400> 412

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Glu Leu Leu Ile Tyr
1 5 10 15

<210> 413
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<213> Homo Sapiens

<400> 413

Trp Tyr Gln Gln Lys Leu Gly Lys Ala Pro Lys Leu Leu Ile His
1 5 10 15

<210> 414
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 414

Gly Val Pro Asp Arg Phe Asn Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys
20 25 30

<210> 415
<211> 32
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<213> Homo Sapiens

<400> 415

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys
20 25 30

<210> 416
<211> 32
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<213> Homo Sapiens

<400> 416

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Val Ala Thr Tyr Tyr Cys
20 25 30

<210> 417
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<213> Homo Sapiens

<400> 417

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr
1 5 10 15

Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys
20 25 30

<210> 418
<211> 32
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<213> Homo Sapiens

<400> 418

Gly Val Pro Asp Arg Phe Ser Gly Thr Gly Ala Gly Thr Asp Phe Thr
1 5 10 15

Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys
20 25 30

<210> 419
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<213> Homo Sapiens

<400> 419

Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys
            20   25   30

<210> 420
<211> 32
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<213> Homo Sapiens

<400> 420

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr
1   5   10   15

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
            20   25   30

<210> 421
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<213> Homo Sapiens

<400> 421

Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr
1   5   10   15

Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
            20   25   30

<210> 422
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<212> PRT
<213> Homo Sapiens

<400> 422

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1   5   10   15

Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
            20   25   30

<210> 423
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<212> PRT
<213> Homo Sapiens

<400> 423

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1   5   10   15

Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Phe Cys
            20   25   30

<210> 424
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 424

Gly Val Pro Asp Arg Phe Gly Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys
20 25 30

<210> 425
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 425

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Ala Asp Asp Val Ala Val Tyr Tyr Cys
20 25 30

<210> 426
<211> 32
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<213> Homo Sapiens

<400> 426

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp Val Ala Leu Tyr Tyr Cys
20 25 30

<210> 427
<211> 32
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<213> Homo Sapiens

<400> 427

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Phe Tyr Cys
20 25 30

<210> 428
<211> 32
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<213> Homo Sapiens

<400> 428

Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys

20 25 30

<210> 429
<211> 32
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<213> Homo Sapiens

<400> 429

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
20 25 30

<210> 430
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 430

Gly Ile Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Ser Glu Asp Phe Ala Val Tyr Tyr Cys
20 25 30

<210> 431
<211> 32
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<213> Homo Sapiens

<400> 431

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Ala Tyr Tyr Cys
20 25 30

<210> 432
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 432

Gly Val Pro Ser Arg Val Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Arg Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
20 25 30

<210> 433
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 433

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Leu Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
20 25 30

<210> 434
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 434

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asn Phe Ala Thr Tyr Tyr Cys
20 25 30

<210> 435
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 435

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Phe Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
20 25 30

<210> 436
<211> 32
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<213> Homo Sapiens

<400> 436

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Leu Ser Ser Leu Gln Pro Glu Asp Phe Ala Ser Tyr Tyr Cys
20 25 30

<210> 437
<211> 32
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<213> Homo Sapiens

<400> 437

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Ser Tyr Tyr Cys
20 25 30

<210> 438
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<213> Homo Sapiens

<400> 438

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys
20 25 30

<210> 439
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 439

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Glu Thr Asp Phe Thr
1 5 10 15

Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys
20 25 30

<210> 440
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 440

Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
1 5 10

<210> 441
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<212> PRT
<213> Homo Sapiens

<400> 441

Phe Gly Gln Gly Thr Arg Leu Glu Ile Ile
1 5 10

<210> 442
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<212> PRT
<213> Homo Sapiens

<400> 442

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
1 5 10

<210> 443
<211> 10
<212> PRT

<213> Homo Sapiens

<400> 443

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
1   5   10

<210> 444
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 444

Phe Gly His Gly Thr Arg Leu Glu Ile Lys
1   5   10

<210> 445
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 445

Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
1   5   10

<210> 446
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 446

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
1   5   10

<210> 447
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 447

Phe Gly Pro Gly Thr Lys Val Glu Ile Lys
1   5   10

<210> 448
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 448

Phe Gly Gly Gly Thr Lys Val Ala Ile Lys
1   5   10

<210> 449
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 449

Phe Gly Pro Gly Thr Lys Met Asp Ile Lys
1 5 10

<210> 450
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 450

Phe Gly Gln Gly Thr Lys Val Glu Phe Lys
1 5 10

<210> 451
<211> 10
<212> PRT
<213> Homo Sapiens

<400> 451

Phe Gly Gly Gly Thr Lys Val Glu Ile Arg
1 5 10

<210> 452
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 452

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
20 25

<210> 453
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 453

Gln Val His Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Val Ser
20 25

<210> 454
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 454

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Arg Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Val Ser
            20   25

<210> 455
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 455

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> 456
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 456

Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
1   5   10   15

Thr Leu Thr Leu Thr Cys Thr Phe Ser
            20   25

<210> 457
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 457

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
            20   25

<210> 458
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 458

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
            20   25

<210> 459
<211> 25
<212> PRT

<213> Homo Sapiens

<400> 459

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 Thr Ala Ser
20 25

<210> 460
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 460

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> 461
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 461

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> 462
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 462

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
20 25

<210> 463
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 463

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1 5 10 15

Thr Leu Ser Leu Asn Cys Thr Val Ser
            20   25

<210> 464
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 464

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
            20   25

<210> 465
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 465

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
            20   25

<210> 466
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 466

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Leu Lys Lys Pro Gly Glu
1   5   10   15

Ser Leu Lys Ile Ser Cys Lys Gly Ser
            20   25

<210> 467
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 467

Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
1   5   10   15

Ser Leu Lys Ile Ser Cys Lys Gly Ser
            20   25

<210> 468
<211> 25
<212> PRT
<213> Homo Sapiens

<400> 468

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
20 25

<210> 469
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 469

Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly
1 5 10

<210> 470
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 470

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Met Gly
1 5 10

<210> 471
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 471

Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu Trp Leu Ala
1 5 10

<210> 472
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 472

Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu Trp Leu Val
1 5 10

<210> 473
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 473

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser
1 5 10

<210> 474
<211> 14

<212> PRT
<213> Homo Sapiens

<400> 474

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala
1 5 10

<210> 475
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 475

Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly
1 5 10

<210> 476
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 476

Trp Val Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly
1 5 10

<210> 477
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 477

Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile Gly
1 5 10

<210> 478
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 478

Trp Ile Arg Gln Pro Ala Gly Lys Gly Leu Glu Trp Ile Gly
1 5 10

<210> 479
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 479

Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Trp Met Gly
1 5 10

<210> 480
<211> 14
<212> PRT
<213> Homo Sapiens

<400> 480

Trp Ile Arg Gln Ser Pro Ser Arg Gly Leu Glu Trp Leu Gly
1 5 10

<210> 481
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 481

Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr Met Glu
1 5 10 15

Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> 482
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 482

Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
1 5 10 15

Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> 483
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 483

Arg Val Thr Met Leu Glu Asp Thr Ser Thr Asp Thr Ala Tyr Met Glu
1 5 10 15

Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Thr
20 25 30

<210> 484
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 484

Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Ser Gln Val Val Leu Thr
1 5 10 15

Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr Cys Ala Arg
20 25 30

<210> 485

<211> 32
<212> PRT
<213> Homo Sapiens

<400> 485

Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn Gln Val Val Leu Thr
1 5 10 15

Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr Cys Ala His
20 25 30

<210> 486
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 486

Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Thr Gln Val Val Leu Thr
1 5 10 15

Val Thr Asp Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr Cys Ala His
20 25 30

<210> 487
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 487

Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn Gln Val Val Leu Thr
1 5 10 15

Met Thr Asn Leu Asp Pro Val Asp Thr Ala Thr Tyr Tyr Cys Ala His
20 25 30

<210> 488
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 488

Arg Leu Thr Ile Thr Lys Ala Thr Ser Lys Asn Gln Val Val Leu Thr
1 5 10 15

Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr Cys Ala His
20 25 30

<210> 489
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 489

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
            20   25   30

<210> 490
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 490

Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
1   5   10   15

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Lys
            20   25   30

<210> 491
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 491

Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
1   5   10   15

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Glu Tyr Tyr Cys Ala Lys
            20   25   30

<210> 492
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 492

Arg Phe Thr Ile Ser Arg Asp Asn Ser Met Asn Thr Leu Tyr Leu Gln
1   5   10   15

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
            20   25   30

<210> 493
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 493

Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
1   5   10   15

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
            20   25   30

<210> 494
<211> 32

<212> PRT
<213> Homo Sapiens

<400> 494

Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Val Leu
20 25 30

<210> 495
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 495

Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Asp Leu Gln
1 5 10 15

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> 496
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 496

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe Leu Gln
1 5 10 15

Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys Ala Leu
20 25 30

<210> 497
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 497

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Val Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> 498
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 498

Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr Leu Gln
1 5 10 15

Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
            20   25   30

<210> 499
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 499

Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Asn
1   5   10   15

Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
            20   25   30

<210> 500
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 500

Arg Val Asn Met Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys
1   5   10   15

Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
            20   25   30

<210> 501
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 501

Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys
1   5   10   15

Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
            20   25   30

<210> 502
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 502

Arg Ile Thr Ile Ser Ala Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys
1   5   10   15

Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
            20   25   30

<210> 503
<211> 32
<212> PRT

<213> Homo Sapiens

<400> 503

Arg Ile Thr Lys Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys
1 5 10 15

Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> 504
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 504

Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys
1 5 10 15

Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Ser
20 25 30

<210> 505
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 505

Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys
1 5 10 15

Leu Phe Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Phe Cys Ala Arg
20 25 30

<210> 506
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 506

Arg Val Thr Met Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys
1 5 10 15

Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> 507
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 507

Arg Val Thr Ile Ser Ile Val Thr Ser Arg Asn Gln Phe Ser Leu Lys
1 5 10 15

Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
            20   25   30

<210> 508
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 508

Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser Thr Ala Tyr Leu Gln
1   5   10   15

Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys Ala Arg
            20   25   30

<210> 509
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 509

Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Asn Thr Ala Tyr Leu Gln
1   5   10   15

Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys Ala Arg
            20   25   30

<210> 510
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 510

Arg Ile Thr Ile Asn Pro Asp Thr Ser Lys Asn Gln Phe Ser Leu Gln
1   5   10   15

Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
            20   25   30

<210> 511
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 511

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
1   5   10

<210> 512
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 512

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser

1 5 10

<210> 513
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 513

Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
1 5 10

<210> 514
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 514

Trp Gly Gln Gly Ser Leu Val Thr Val Ser Pro
1 5 10

<210> 515
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 515

Trp Gly Gln Gly Thr Lys Val Thr Val Ser Ser
1 5 10

<210> 516
<211> 11
<212> PRT
<213> Homo Sapiens

<400> 516

Trp Gly Arg Gly Thr Leu Val Thr Val Ser Ser
1 5 10

<210> 517
<211> 657
<212> PRT
<213> Homo Sapiens

<400> 517

Gly Ala Tyr Gly Thr Asn Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Met Thr Asn Trp Ser Asn Met Thr
20 25 30

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Met Thr Asn Gly Gly Asn
35 40 45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
50 55 60

```
Ser Asn Thr Gly Tyr Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Met Thr Asn Gly Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Gly Ala Tyr Gly Gly Asn Ala Ala Tyr Ala Cys Asn Thr Ala Tyr Met
            100                 105                 110

Thr Asn Ala Ala Tyr Thr Gly Gly Thr Thr Tyr Cys Ala Arg Cys Ala
        115                 120                 125

Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Arg Trp Ser Asn
    130                 135                 140

Cys Cys Asn Met Gly Asn Met Gly Asn Met Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Thr Gly
                165                 170                 175

Gly Gly Ala Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Ala Ala Tyr Gly Gly Asn Trp
        195                 200                 205

Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Trp Ser Asn
        275                 280                 285

Ala Cys Asn Cys Ala Tyr Thr Gly Gly Cys Cys Asn Ala Thr His Ala
    290                 295                 300

Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys
305                 310                 315                 320

Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335
```

```
Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn Cys
            340                 345                 350

Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr Thr
        355                 360                 365

Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala Arg
    370                 375                 380

Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Ala
385                 390                 395                 400

Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr Gly
                405                 410                 415

Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr Tyr
            420                 425                 430

Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn Ala
        435                 440                 445

Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly Thr
    450                 455                 460

Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala Arg
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg Gly
                485                 490                 495

Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys Ala
            500                 505                 510

Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser Asn
        515                 520                 525

Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp
    530                 535                 540

Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp Ser
545                 550                 555                 560

Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Arg
                565                 570                 575

Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr Gly
            580                 585                 590

Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys Ala
        595                 600                 605
```

```
Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
    610                 615                 620

Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn Thr
625                 630                 635                 640

Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr Gly
                645                 650                 655

Tyr
```

<210> 518
<211> 657
<212> PRT
<213> Homo Sapiens

<400> 518

```
Gly Ala Tyr Gly Thr Asn Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Met Thr Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Met Thr Asn Gly Gly Asn
        35                  40                  45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Met Thr Asn Gly Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Gly Ala Tyr Gly Gly Asn Ala Ala Tyr Ala Cys Asn Thr Ala Tyr Met
            100                 105                 110

Thr Asn Ala Ala Tyr Thr Gly Gly Thr Thr Tyr Cys Ala Arg Cys Ala
        115                 120                 125

Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Arg Trp Ser Asn
    130                 135                 140

Cys Cys Asn Met Gly Asn Met Gly Asn Met Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Thr Gly
                165                 170                 175
```

```
Gly Gly Ala Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
        195                 200                 205

Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr His Cys Ala Arg Gly Gly Asn
        275                 280                 285

Ala Cys Asn Cys Ala Tyr Thr Gly Gly Cys Cys Asn Ala Cys Asn Ala
    290                 295                 300

Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys
305                 310                 315                 320

Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335

Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn Cys
            340                 345                 350

Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr Thr
        355                 360                 365

Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala Arg
    370                 375                 380

Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Ala
385                 390                 395                 400

Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr Gly
                405                 410                 415

Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr Tyr
            420                 425                 430

Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn Ala
        435                 440                 445
```

```
Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly Thr
    450                 455                 460

Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala Arg
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg Gly
                485                 490                 495

Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys Ala
            500                 505                 510

Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser Asn
        515                 520                 525

Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp
    530                 535                 540

Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp Ser
545                 550                 555                 560

Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Arg
                565                 570                 575

Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr Gly
            580                 585                 590

Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys Ala
        595                 600                 605

Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
    610                 615                 620

Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn Thr
625                 630                 635                 640

Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr Gly
                645                 650                 655

Tyr
```

<210> 519
<211> 657
<212> PRT
<213> Homo Sapiens

<400> 519

```
Gly Ala Tyr Gly Thr Asn Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15
```

```
Ala Arg Trp Ser Asn Cys Cys Asn Met Thr Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Met Thr Asn Gly Gly Asn
        35                  40                  45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Met Thr Asn Gly Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Gly Ala Tyr Gly Gly Asn Ala Ala Tyr Ala Cys Asn Thr Ala Tyr Met
            100                 105                 110

Thr Asn Ala Ala Tyr Thr Gly Gly Met Thr Asn Cys Ala Arg Cys Ala
        115                 120                 125

Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Arg Trp Ser Asn
    130                 135                 140

Cys Cys Asn Met Gly Asn Met Gly Asn Met Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Thr Gly
                165                 170                 175

Gly Gly Ala Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
        195                 200                 205

Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Gly Gly Asn
        275                 280                 285
```

```
Ala Cys Asn Cys Ala Tyr Thr Gly Gly Cys Cys Asn Ala Thr His Ala
    290                 295                 300

Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys
305                 310                 315                 320

Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335

Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn Cys
            340                 345                 350

Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr Thr
        355                 360                 365

Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala Arg
    370                 375                 380

Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Ala
385                 390                 395                 400

Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr Gly
                405                 410                 415

Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr Tyr
            420                 425                 430

Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn Ala
        435                 440                 445

Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly Thr
    450                 455                 460

Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala Arg
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg Gly
                485                 490                 495

Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys Ala
            500                 505                 510

Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser Asn
        515                 520                 525

Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp
    530                 535                 540

Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp Ser
545                 550                 555                 560
```

```
Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Arg
                565                 570                 575


Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr Gly
            580                 585                 590


Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys Ala
        595                 600                 605


Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
    610                 615                 620


Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn Thr
625                 630                 635                 640


Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr Gly
                645                 650                 655


Tyr



<210>  520
<211>  657
<212>  PRT
<213>  Homo Sapiens

<400>  520

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15


Ala Arg Ala Cys Asn Cys Cys Asn Met Thr Asn Trp Ser Asn Met Thr
            20                  25                  30


Asn Trp Ser Asn Gly Thr Asn Ala Cys Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45


Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60


Ser Asn Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80


Arg Trp Ser Asn Met Thr Asn Met Thr Asn Cys Ala Tyr Trp Ser Asn
                85                  90                  95


Gly Ala Tyr Gly Gly Asn Ala Ala Arg Ala Cys Asn Thr Ala Tyr Met
            100                 105                 110


Thr Asn Thr Ala Tyr Thr Gly Gly Thr Ala Tyr Met Thr Asn Cys Ala
        115                 120                 125


Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn
```

130 135 140

Cys Cys Asn Cys Ala Arg Met Thr Asn Met Thr Asn Ala Thr His Thr
145 150 155 160

Ala Tyr Gly Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Met Gly
165 170 175

Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
180 185 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
195 200 205

Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly Ala
210 215 220

Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Ala Arg Ala Thr His
225 230 235 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
245 250 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
260 265 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Gly Gly Asn
275 280 285

Ala Thr His Cys Ala Arg Met Thr Asn Cys Cys Asn Thr Gly Tyr Trp
290 295 300

Ser Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys
305 310 315 320

Asn Ala Ala Arg Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
325 330 335

Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn Cys
340 345 350

Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr Thr
355 360 365

Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala Arg
370 375 380

Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Ala
385 390 395 400

Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr Gly

405 410 415

Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr Tyr
420 425 430

Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn Ala
435 440 445

Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly Thr
450 455 460

Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala Arg
465 470 475 480

Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg Gly
485 490 495

Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys Ala
500 505 510

Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser Asn
515 520 525

Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp
530 535 540

Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp Ser
545 550 555 560

Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Arg
565 570 575

Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr Gly
580 585 590

Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys Ala
595 600 605

Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
610 615 620

Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn Thr
625 630 635 640

Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr Gly
645 650 655

Tyr

<210> 521

<211> 657
<212> PRT
<213> Homo Sapiens

<400> 521

```
Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15


Ala Arg Ala Cys Asn Cys Cys Asn Met Thr Asn Trp Ser Asn Met Thr
            20                  25                  30


Asn Trp Ser Asn Gly Thr Asn Ala Cys Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45


Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60


Ser Asn Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80


Arg Trp Ser Asn Met Thr Asn Met Thr Asn Cys Ala Tyr Trp Ser Asn
                85                  90                  95


Gly Ala Tyr Gly Gly Asn Ala Ala Arg Ala Cys Asn Thr Ala Tyr Met
            100                 105                 110


Thr Asn Thr Ala Tyr Thr Gly Gly Thr Ala Tyr Met Thr Asn Cys Ala
        115                 120                 125


Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn
    130                 135                 140


Cys Cys Asn Cys Ala Arg Met Thr Asn Met Thr Asn Ala Thr His Thr
145                 150                 155                 160


Ala Tyr Gly Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Met Gly
                165                 170                 175


Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190


Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
        195                 200                 205


Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly Ala
    210                 215                 220


Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240


Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255
```

```
Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Trp Ser Asn
        275                 280                 285

Ala Thr His Cys Ala Arg Met Thr Asn Cys Cys Asn Met Thr Asn Ala
    290                 295                 300

Cys Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Ala Cys
305                 310                 315                 320

Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335

Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn Cys
            340                 345                 350

Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr Thr
        355                 360                 365

Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala Arg
    370                 375                 380

Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Ala
385                 390                 395                 400

Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr Gly
                405                 410                 415

Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr Tyr
            420                 425                 430

Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn Ala
        435                 440                 445

Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly Thr
    450                 455                 460

Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala Arg
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg Gly
                485                 490                 495

Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys Ala
            500                 505                 510

Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser Asn
        515                 520                 525
```

```
Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp
    530                 535                 540

Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp Ser
545                 550                 555                 560

Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Arg
                565                 570                 575

Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr Gly
            580                 585                 590

Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys Ala
        595                 600                 605

Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
    610                 615                 620

Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn Thr
625                 630                 635                 640

Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr Gly
                645                 650                 655

Tyr
```

<210> 522
<211> 657
<212> PRT
<213> Homo Sapiens

<400> 522

```
Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Ala Cys Asn Cys Cys Asn Met Thr Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Thr Asn Ala Cys Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Met Thr Asn Met Thr Asn Cys Ala Tyr Trp Ser Asn
                85                  90                  95
```

```
Gly Ala Tyr Gly Gly Asn Ala Ala Arg Ala Cys Asn Thr Ala Tyr Met
            100                 105                 110

Thr Asn Thr Ala Tyr Thr Gly Gly Thr Thr Tyr Met Thr Asn Cys Ala
        115                 120                 125

Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn
    130                 135                 140

Cys Cys Asn Cys Ala Arg Cys Cys Asn Met Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Gly Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Met Gly
                165                 170                 175

Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
        195                 200                 205

Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Trp Ser Asn
        275                 280                 285

Ala Thr His Cys Ala Arg Met Thr Asn Cys Cys Asn Ala Thr His Ala
    290                 295                 300

Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Tyr Gly Gly Asn Ala Cys
305                 310                 315                 320

Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335

Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn Cys
            340                 345                 350

Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr Thr
        355                 360                 365
```

```
Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala Arg
    370                 375                 380

Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Ala
385                 390                 395                 400

Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr Gly
                405                 410                 415

Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr Tyr
            420                 425                 430

Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn Ala
        435                 440                 445

Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly Thr
    450                 455                 460

Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala Arg
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg Gly
                485                 490                 495

Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys Ala
            500                 505                 510

Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser Asn
        515                 520                 525

Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp
    530                 535                 540

Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp Ser
545                 550                 555                 560

Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Arg
                565                 570                 575

Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr Gly
            580                 585                 590

Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys Ala
        595                 600                 605

Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
    610                 615                 620

Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn Thr
625                 630                 635                 640
```

```
Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr Gly
                645                 650                 655


Tyr



<210>  523
<211>  642
<212>  PRT
<213>  Homo Sapiens

<400>  523

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30


Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45


Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60


Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80


Arg Gly Gly Asn Ala Thr His Gly Cys Asn Ala Ala Tyr Thr Ala Tyr
                85                  90                  95


Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110


Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Thr
        115                 120                 125


Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140


Thr Ala Tyr Gly Thr Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Met
145                 150                 155                 160


Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175


Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190


Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205
```

```
Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Ala Ala Tyr Thr Ala
            260                 265                 270

Tyr Ala Ala Tyr Trp Ser Asn Gly Cys Asn Cys Cys Asn Thr Thr Tyr
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Ala
    290                 295                 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480
```

```
Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495


Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510


Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525


Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540


Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560


Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575


Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590


Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605


Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620


Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640


Gly Tyr



<210>  524
<211>  642
<212>  PRT
<213>  Homo Sapiens

<400>  524

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30


Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45


Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60


Thr His Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
```

65 70 75 80

Arg Gly Gly Asn Ala Thr His Trp Ser Asn Ala Ala Tyr Gly Ala Tyr
85 90 95

Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Thr
115 120 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Met
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
210 215 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Ala Cys Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Ala Ala Arg Thr Ala
260 265 270

Tyr Ala Ala Tyr Trp Ser Asn Gly Thr Asn Cys Cys Asn Met Thr Asn
275 280 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Ala
290 295 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305 310 315 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
325 330 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr

```
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
```

610 615 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625 630 635 640

Gly Tyr

<210> 525
<211> 657
<212> PRT
<213> Homo Sapiens

<400> 525

Ala Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Ala Cys Asn Cys Cys Asn Met Thr Asn Trp Ser Asn Trp Ser
20 25 30

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Met Thr Asn Gly Gly Asn
35 40 45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
50 55 60

Ser Asn Thr Gly Tyr Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Trp Ser Asn Met Thr Asn Gly Thr Asn Cys Ala Tyr Trp Ser Asn
85 90 95

Gly Ala Tyr Gly Gly Asn Ala Ala Tyr Ala Cys Asn Thr Ala Tyr Met
100 105 110

Thr Asn Trp Ser Asn Thr Gly Gly Met Thr Asn Cys Ala Arg Cys Ala
115 120 125

Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn
130 135 140

Cys Cys Asn Met Gly Asn Met Thr Asn Met Thr Asn Ala Thr His Thr
145 150 155 160

Ala Tyr Ala Ala Arg Ala Thr His Trp Ser Asn Ala Ala Tyr Met Gly
165 170 175

Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
180 185 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
195 200 205

```
Ser Asn Gly Gly Asn Gly Cys Asn Gly Gly Asn Ala Cys Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Gly Cys Asn
        275                 280                 285

Ala Cys Asn Cys Ala Arg Thr Thr Tyr Cys Cys Asn Cys Ala Tyr Ala
    290                 295                 300

Cys Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Ala Cys
305                 310                 315                 320

Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Thr His Ala Ala Arg
                325                 330                 335

Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn Cys
            340                 345                 350

Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr Thr
        355                 360                 365

Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala Arg
    370                 375                 380

Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Ala
385                 390                 395                 400

Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr Gly
                405                 410                 415

Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr Tyr
            420                 425                 430

Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn Ala
        435                 440                 445

Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly Thr
    450                 455                 460

Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala Arg
465                 470                 475                 480
```

```
Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg Gly
                485                 490                 495


Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys Ala
            500                 505                 510


Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser Asn
        515                 520                 525


Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp
    530                 535                 540


Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp Ser
545                 550                 555                 560


Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Arg
                565                 570                 575


Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr Gly
            580                 585                 590


Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys Ala
        595                 600                 605


Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
    610                 615                 620


Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn Thr
625                 630                 635                 640


Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr Gly
                645                 650                 655


Tyr



<210>  526
<211>  657
<212>  PRT
<213>  Homo Sapiens

<400>  526

Gly Ala Arg Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15


Ala Arg Ala Cys Asn Cys Cys Asn Met Thr Asn Trp Ser Asn Trp Ser
            20                  25                  30


Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Met Thr Asn Gly Gly Asn
        35                  40                  45
```

```
Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Met Thr Asn Gly Thr Asn Cys Ala Tyr Trp Ser Asn
                85                  90                  95

Gly Ala Tyr Gly Gly Asn Ala Ala Tyr Ala Cys Asn Thr Ala Tyr Met
            100                 105                 110

Thr Asn Trp Ser Asn Thr Gly Gly Met Thr Asn Cys Ala Arg Cys Ala
        115                 120                 125

Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn
    130                 135                 140

Cys Cys Asn Met Gly Asn Met Thr Asn Met Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Ala Ala Arg Ala Thr His Trp Ser Asn Ala Ala Tyr Met Gly
                165                 170                 175

Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Ala
        195                 200                 205

Cys Asn Gly Gly Asn Gly Cys Asn Gly Gly Asn Ala Cys Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Gly Cys Asn
        275                 280                 285

Ala Cys Asn Cys Ala Arg Thr Thr Tyr Cys Cys Asn Cys Ala Tyr Ala
    290                 295                 300

Cys Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Ala Cys
305                 310                 315                 320
```

```
Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335

Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn Cys
            340                 345                 350

Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr Thr
        355                 360                 365

Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala Arg
    370                 375                 380

Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Ala
385                 390                 395                 400

Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr Gly
                405                 410                 415

Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr Tyr
            420                 425                 430

Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn Ala
        435                 440                 445

Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly Thr
    450                 455                 460

Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala Arg
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg Gly
                485                 490                 495

Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys Ala
            500                 505                 510

Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser Asn
        515                 520                 525

Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp
    530                 535                 540

Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp Ser
545                 550                 555                 560

Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Arg
                565                 570                 575

Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr Gly
            580                 585                 590
```

```
Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys Ala
        595                 600                 605

Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
    610                 615                 620

Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn Thr
625                 630                 635                 640

Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr Gly
                645                 650                 655

Tyr
```

<210> 527
<211> 645
<212> PRT
<213> Homo Sapiens

<400> 527

```
Gly Ala Arg Ala Thr His Gly Thr Asn Met Thr Asn Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Gly Asn Ala Cys Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Met Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Met Thr Asn Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Ala Cys Asn Gly Thr Asn Ala Thr His Trp Ser Asn Trp Ser Asn
                85                  90                  95

Thr Ala Tyr Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys
            100                 105                 110

Ala Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala
        115                 120                 125

Arg Gly Cys Asn Cys Cys Asn Met Gly Asn Met Thr Asn Met Thr Asn
    130                 135                 140

Ala Thr His Trp Ser Asn Gly Gly Asn Gly Cys Asn Trp Ser Asn Trp
145                 150                 155                 160
```

```
Ser Asn Met Gly Asn Gly Cys Asn Ala Cys Asn Gly Gly Asn Ala Thr
                165                 170                 175

His Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn
            180                 185                 190

Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala
        195                 200                 205

Cys Asn Gly Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys
    210                 215                 220

Asn Ala Thr His Trp Ser Asn Met Gly Asn Met Thr Asn Gly Ala Arg
225                 230                 235                 240

Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Gly
                245                 250                 255

Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala
            260                 265                 270

Arg Thr Ala Tyr Gly Gly Asn Trp Ser Asn Trp Ser Asn Cys Cys Asn
        275                 280                 285

Met Gly Asn Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly
    290                 295                 300

Gly Asn Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr
305                 310                 315                 320

His Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn
                325                 330                 335

Gly Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala
            340                 345                 350

Thr His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala
        355                 360                 365

Tyr Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn
    370                 375                 380

Gly Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly
385                 390                 395                 400

Thr Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala
                405                 410                 415

Tyr Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg
            420                 425                 430
```

```
Gly Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala
        435                 440                 445


Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr
    450                 455                 460


Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn
465                 470                 475                 480


Cys Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly
                485                 490                 495


Ala Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala
            500                 505                 510


Tyr Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn
        515                 520                 525


Trp Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met
    530                 535                 540


Thr Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala
545                 550                 555                 560


Tyr Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn
                565                 570                 575


Thr Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala
            580                 585                 590


Cys Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser
        595                 600                 605


Asn Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg
    610                 615                 620


Trp Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly
625                 630                 635                 640


Ala Arg Thr Gly Tyr
                645


<210>  528
<211>  639
<212>  PRT
<213>  Homo Sapiens

<400>  528

Gly Ala Arg Ala Thr His Gly Thr Asn Met Thr Asn Ala Cys Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Cys Cys Asn Gly Gly Asn Ala Cys Asn Met Thr
```

```
            20                  25                  30

Asn Trp Ser Asn Met Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Met Thr Asn Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Trp Ser Asn Met Gly Asn Met Thr Asn
                85                  90                  95

Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala
            100                 105                 110

Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys
        115                 120                 125

Asn Met Gly Asn Met Thr Asn Met Thr Asn Ala Thr His Thr Ala Tyr
    130                 135                 140

Gly Gly Asn Gly Cys Asn Trp Ser Asn Met Gly Asn Met Gly Asn Gly
145                 150                 155                 160

Cys Asn Ala Cys Asn Gly Gly Asn Ala Thr His Cys Cys Asn Gly Ala
                165                 170                 175

Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn
            180                 185                 190

Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly Ala Tyr Thr
        195                 200                 205

Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr His Trp Ser
    210                 215                 220

Asn Met Gly Asn Met Thr Asn Gly Ala Arg Cys Cys Asn Gly Ala Arg
225                 230                 235                 240

Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr
                245                 250                 255

Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala Tyr Gly Gly
            260                 265                 270

Asn Trp Ser Asn Trp Ser Asn Cys Cys Asn Met Gly Asn Trp Ser Asn
        275                 280                 285

Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala
```

290 295 300

Ala Arg Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg Met Gly
305 310 315 320

Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn Cys Cys Asn
325 330 335

Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr Thr Tyr Cys
340 345 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala Arg Cys Ala
355 360 365

Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Ala Cys Asn
370 375 380

Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr Gly Tyr Met
385 390 395 400

Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr Tyr Thr Ala
405 410 415

Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn Ala Ala Arg
420 425 430

Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly Thr Asn Gly
435 440 445

Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala Arg Trp Ser
450 455 460

Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg Gly Ala Arg
465 470 475 480

Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys Ala Arg Gly
485 490 495

Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser Asn Ala Cys
500 505 510

Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
515 520 525

Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp Ser Asn Ala
530 535 540

Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Arg Ala Ala
545 550 555 560

Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr Gly Cys Asn

565 570 575

Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys Ala Tyr Cys
580 585 590

Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Cys Cys
595 600 605

Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn Thr Thr Tyr
610 615 620

Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr Gly Tyr
625 630 635

<210> 529
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 529

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
50 55 60

Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Gly Gly Asn Ala Thr His Met Gly Asn Ala Ala Tyr Gly Ala Tyr
85 90 95

Met Thr Asn Gly Gly Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Met Gly Asn Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

```
Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Arg Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Met Thr Asn Cys Ala Arg Cys Ala
            260                 265                 270

Tyr Ala Ala Tyr Trp Ser Asn Thr Ala Tyr Cys Cys Asn Cys Cys Asn
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
    290                 295                 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445
```

```
Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr


<210>  530
<211>  660
<212>  PRT
<213>  Homo Sapiens

<400>  530

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Met Thr
            20                  25                  30
```

```
Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Met Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Met Thr Asn Gly Thr Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Thr Thr Tyr Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Ala Cys Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Thr Thr Tyr Cys Cys Asn Thr
    290                 295                 300
```

```
Gly Gly Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305                 310                 315                 320

Asn Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335

Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly
            340                 345                 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr
        355                 360                 365

His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr
    370                 375                 380

Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly
385                 390                 395                 400

Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr
                405                 410                 415

Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr
            420                 425                 430

Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
        435                 440                 445

Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala
    450                 455                 460

Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn
465                 470                 475                 480

Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys
                485                 490                 495

Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala
            500                 505                 510

Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr
        515                 520                 525

Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
545                 550                 555                 560

Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr
                565                 570                 575
```

```
Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr
            580                 585                 590

Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys
        595                 600                 605

Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn
    610                 615                 620

Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp
625                 630                 635                 640

Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala
                645                 650                 655

Arg Thr Gly Tyr
            660


<210>  531
<211>  660
<212>  PRT
<213>  Homo Sapiens

<400>  531

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Met Thr
            20                  25                  30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Met Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140
```

```
Cys Cys Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Ala Cys Asn Ala Cys Asn Thr
    290                 295                 300

Gly Gly Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305                 310                 315                 320

Asn Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335

Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly
            340                 345                 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr
        355                 360                 365

His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr
    370                 375                 380

Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly
385                 390                 395                 400

Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr
                405                 410                 415
```

```
Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr
            420                 425                 430

Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
        435                 440                 445

Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala
    450                 455                 460

Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn
465                 470                 475                 480

Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys
                485                 490                 495

Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala
            500                 505                 510

Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr
        515                 520                 525

Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
545                 550                 555                 560

Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr
                565                 570                 575

Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr
            580                 585                 590

Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys
        595                 600                 605

Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn
    610                 615                 620

Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp
625                 630                 635                 640

Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala
                645                 650                 655

Arg Thr Gly Tyr
            660
```

<210> 532
<211> 660
<212> PRT
<213> Homo Sapiens

<400> 532

```
Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Met Thr
            20                  25                  30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Met Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Ala Ala Tyr Gly Thr Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
```

260 265 270

Asn Thr Ala Tyr Thr Thr Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
275 280 285

Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Cys Asn Cys Cys Asn Met
290 295 300

Gly Asn Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305 310 315 320

Asn Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
325 330 335

Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly
340 345 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr
355 360 365

His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr
370 375 380

Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly
385 390 395 400

Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr
405 410 415

Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr
420 425 430

Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
435 440 445

Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala
450 455 460

Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn
465 470 475 480

Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys
485 490 495

Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala
500 505 510

Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr
515 520 525

Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp

530 535 540

Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
545 550 555 560

Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr
565 570 575

Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr
580 585 590

Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys
595 600 605

Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn
610 615 620

Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp
625 630 635 640

Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala
645 650 655

Arg Thr Gly Tyr
660

<210> 533
<211> 660
<212> PRT
<213> Homo Sapiens

<400> 533

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Met Thr
20 25 30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Met Thr Asn Gly Gly Asn
35 40 45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Ala Thr His Ala
50 55 60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Ala Ala Tyr Gly Thr Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn
85 90 95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
100 105 110

```
Ala Tyr Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Thr Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Cys Asn Cys Cys Asn Met
    290                 295                 300

Gly Asn Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305                 310                 315                 320

Asn Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335

Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly
            340                 345                 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr
        355                 360                 365

His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr
    370                 375                 380
```

```
Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly
385                 390                 395                 400

Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr
                405                 410                 415

Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr
            420                 425                 430

Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
        435                 440                 445

Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala
    450                 455                 460

Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn
465                 470                 475                 480

Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys
                485                 490                 495

Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala
            500                 505                 510

Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr
        515                 520                 525

Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
545                 550                 555                 560

Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr
                565                 570                 575

Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr
            580                 585                 590

Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys
        595                 600                 605

Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn
    610                 615                 620

Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp
625                 630                 635                 640

Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala
                645                 650                 655
```

Arg Thr Gly Tyr
            660

<210> 534
<211> 660
<212> PRT
<213> Homo Sapiens

<400> 534

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1   5   10   15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Met Thr
            20   25   30

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Met Thr Asn Gly Gly Asn
        35   40   45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Ala Thr His Ala
    50   55   60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65   70   75   80

Arg Trp Ser Asn Gly Thr Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn
                85   90   95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100   105   110

Ala Tyr Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115   120   125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130   135   140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala
145   150   155   160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Ala Cys
                165   170   175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180   185   190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Gly Gly Asn Gly
        195   200   205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys
    210   215   220

```
Asn Gly Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Ala Thr His Trp Ser Asn Met
    290                 295                 300

Gly Asn Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305                 310                 315                 320

Asn Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335

Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly
            340                 345                 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr
        355                 360                 365

His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr
    370                 375                 380

Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly
385                 390                 395                 400

Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr
                405                 410                 415

Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr
            420                 425                 430

Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
        435                 440                 445

Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala
    450                 455                 460

Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn
465                 470                 475                 480

Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys
                485                 490                 495
```

```
Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala
            500                 505                 510

Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr
        515                 520                 525

Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
545                 550                 555                 560

Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr
                565                 570                 575

Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr
            580                 585                 590

Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys
        595                 600                 605

Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn
    610                 615                 620

Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp
625                 630                 635                 640

Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala
                645                 650                 655

Arg Thr Gly Tyr
            660


<210>  535
<211>  660
<212>  PRT
<213>  Homo Sapiens

<400>  535

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Met Thr
            20                  25                  30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Met Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60
```

```
Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Met Thr Asn Thr Ala Tyr Ala Ala Tyr
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Tyr Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Ala Cys Asn Ala Cys Asn Thr
    290                 295                 300

Gly Gly Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly
305                 310                 315                 320

Asn Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335
```

```
Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly
            340                 345                 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr
        355                 360                 365

His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr
    370                 375                 380

Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly
385                 390                 395                 400

Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr
                405                 410                 415

Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr
            420                 425                 430

Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
        435                 440                 445

Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala
    450                 455                 460

Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn
465                 470                 475                 480

Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys
                485                 490                 495

Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala
            500                 505                 510

Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr
        515                 520                 525

Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
545                 550                 555                 560

Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr
                565                 570                 575

Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr
            580                 585                 590

Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys
        595                 600                 605
```

```
Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn
    610                 615                 620

Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp
625                 630                 635                 640

Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala
                645                 650                 655

Arg Thr Gly Tyr
            660
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<210> 536
<211> 660
<212> PRT
<213> Homo Sapiens

<400> 536

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Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Met Thr
            20                  25                  30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Met Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Met Thr Asn Thr Ala Tyr Ala Ala Tyr
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
```

```
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Tyr Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Ala Cys Asn Ala Cys Asn Thr
    290                 295                 300

Gly Gly Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly
305                 310                 315                 320

Asn Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335

Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly
            340                 345                 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr
        355                 360                 365

His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr
    370                 375                 380

Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly
385                 390                 395                 400

Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr
                405                 410                 415

Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr
            420                 425                 430

Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
        435                 440                 445

Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala
```

450 455 460

Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn
465 470 475 480

Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys
485 490 495

Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala
500 505 510

Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr
515 520 525

Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp
530 535 540

Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
545 550 555 560

Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr
565 570 575

Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr
580 585 590

Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys
595 600 605

Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn
610 615 620

Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp
625 630 635 640

Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala
645 650 655

Arg Thr Gly Tyr
660

<210> 537
<211> 660
<212> PRT
<213> Homo Sapiens

<400> 537

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Met Thr
20 25 30

```
Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Met Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Gly Thr Asn Met Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Met Gly Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Gly Gly Asn Met Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Met Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Ala Cys Asn Ala Thr Gly Thr
    290                 295                 300
```

```
Thr Tyr Trp Ser Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305                 310                 315                 320

Asn Ala Cys Asn Ala Ala Arg Met Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335

Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly
            340                 345                 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr
        355                 360                 365

His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr
    370                 375                 380

Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly
385                 390                 395                 400

Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr
                405                 410                 415

Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr
            420                 425                 430

Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
        435                 440                 445

Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala
    450                 455                 460

Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn
465                 470                 475                 480

Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys
                485                 490                 495

Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala
            500                 505                 510

Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr
        515                 520                 525

Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
545                 550                 555                 560

Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr
                565                 570                 575
```

```
Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr
            580                 585                 590

Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys
        595                 600                 605

Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn
    610                 615                 620

Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp
625                 630                 635                 640

Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala
                645                 650                 655

Arg Thr Gly Tyr
            660
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<210> 538
<211> 660
<212> PRT
<213> Homo Sapiens

<400> 538

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Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Met Thr
            20                  25                  30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Met Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Met Thr Asn Gly Ala Tyr Trp Ser Asn
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140
```

```
Cys Cys Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270

Asn Thr Thr Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Tyr Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Ala Cys Asn Cys Cys Asn Met
    290                 295                 300

Thr Asn Ala Cys Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly
305                 310                 315                 320

Asn Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Cys Asn Ala Thr His
                325                 330                 335

Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly
            340                 345                 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr
        355                 360                 365

His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr
    370                 375                 380

Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly
385                 390                 395                 400

Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr
                405                 410                 415
```

```
Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr
            420                 425                 430

Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
        435                 440                 445

Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala
    450                 455                 460

Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn
465                 470                 475                 480

Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys
                485                 490                 495

Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala
            500                 505                 510

Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr
        515                 520                 525

Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
545                 550                 555                 560

Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr
                565                 570                 575

Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr
            580                 585                 590

Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys
        595                 600                 605

Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn
    610                 615                 620

Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp
625                 630                 635                 640

Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala
                645                 650                 655

Arg Thr Gly Tyr
            660
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<210> 539
<211> 660
<212> PRT

<213> Homo Sapiens

<400> 539

```
Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Met Thr
            20                  25                  30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Met Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Ala Thr His Met Thr Asn Thr Ala Tyr Met Gly Asn
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Gly Cys
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Gly
                245                 250                 255
```

```
Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Thr Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Thr Tyr Ala Thr His Ala Cys Asn Cys Cys Asn Met
    290                 295                 300

Thr Asn Ala Cys Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly
305                 310                 315                 320

Asn Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335

Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly
            340                 345                 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr
        355                 360                 365

His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr
    370                 375                 380

Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly
385                 390                 395                 400

Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr
                405                 410                 415

Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr
            420                 425                 430

Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
        435                 440                 445

Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala
    450                 455                 460

Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn
465                 470                 475                 480

Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys
                485                 490                 495

Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala
            500                 505                 510

Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr
        515                 520                 525
```

Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp
530 535 540

Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
545 550 555 560

Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr
565 570 575

Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr
580 585 590

Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys
595 600 605

Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn
610 615 620

Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp
625 630 635 640

Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala
645 650 655

Arg Thr Gly Tyr
660

<210> 540
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 540

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
50 55 60

Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Cys Ala Tyr Thr Ala Tyr
85 90 95

Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Thr Tyr Cys Ala Arg Cys

```
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Trp Ser Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Ala Ala Arg Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270

Tyr Ala Ala Tyr Ala Ala Tyr Thr Ala Tyr Cys Cys Asn Thr Thr Tyr
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Ala
    290                 295                 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
```

370 375 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385 390 395 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
405 410 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
420 425 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
435 440 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
450 455 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465 470 475 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
485 490 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
500 505 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
515 520 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
530 535 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545 550 555 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
565 570 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
580 585 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
595 600 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
610 615 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625 630 635 640

Gly Tyr

<210> 541
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 541

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30


Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45


Gly Ala Tyr Met Gly Asn Gly Thr Asn Gly Cys Asn Ala Thr His Ala
    50                  55                  60


Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80


Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Thr Ala Tyr
                85                  90                  95


Met Thr Asn Gly Cys Asn Thr Gly Gly Met Thr Asn Cys Ala Arg Cys
            100                 105                 110


Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125


Asn Cys Cys Asn Ala Ala Arg Trp Ser Asn Met Thr Asn Ala Thr His
    130                 135                 140


Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145                 150                 155                 160


Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175


Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190


Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205


Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
    210                 215                 220


His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240
```

```
Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270

Tyr Ala Ala Tyr Ala Cys Asn Thr Ala Tyr Cys Cys Asn Thr Thr Tyr
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Ala
    290                 295                 300

Cys Asn Ala Ala Arg Ala Thr Gly Gly Ala Tyr Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510
```

```
Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr
```

<210> 542
<211> 645
<212> PRT
<213> Homo Sapiens

<400> 542

```
Gly Ala Arg Ala Thr His Gly Thr Asn Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Cys Asn Ala Cys Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Ala Cys Asn Met Thr Asn Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr
                85                  90                  95
```

```
Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Gly Ala Tyr Cys Cys Asn Gly Gly Asn Cys Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Met Gly Asn Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Gly Asn Gly Cys Asn Trp Ser Asn Met Gly Asn Met
145                 150                 155                 160

Gly Asn Gly Cys Asn Ala Cys Asn Gly Gly Asn Ala Thr His Cys Cys
                165                 170                 175

Asn Gly Cys Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Arg Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Trp Ser Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Gly Thr Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Cys Ala
            260                 265                 270

Tyr Ala Ala Tyr Ala Ala Tyr Thr Gly Gly Cys Cys Asn Cys Cys Asn
        275                 280                 285

Thr Gly Gly Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly
    290                 295                 300

Gly Asn Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr
305                 310                 315                 320

His Ala Ala Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn
                325                 330                 335

Gly Cys Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala
            340                 345                 350

Thr His Thr Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala
        355                 360                 365
```

```
Tyr Gly Ala Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn
    370                 375                 380

Gly Gly Asn Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly
385                 390                 395                 400

Thr Asn Thr Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala
                405                 410                 415

Tyr Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg
            420                 425                 430

Gly Cys Asn Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala
        435                 440                 445

Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr
    450                 455                 460

Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn
465                 470                 475                 480

Cys Ala Arg Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly
                485                 490                 495

Ala Arg Cys Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala
            500                 505                 510

Tyr Trp Ser Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn
        515                 520                 525

Trp Ser Asn Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met
    530                 535                 540

Thr Asn Trp Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala
545                 550                 555                 560

Tyr Gly Ala Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn
                565                 570                 575

Thr Ala Tyr Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala
            580                 585                 590

Cys Asn Cys Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser
        595                 600                 605

Asn Trp Ser Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg
    610                 615                 620

Trp Ser Asn Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly
625                 630                 635                 640
```

Ala Arg Thr Gly Tyr
645

<210> 543
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 543

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Gly Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
50 55 60

Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Met Gly Asn Thr Gly Gly
85 90 95

Met Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
210 215 220

```
His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Gly Cys
            260                 265                 270

Asn Ala Ala Tyr Trp Ser Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
    290                 295                 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Thr Thr Tyr Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495
```

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
500 505 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
515 520 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
530 535 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545 550 555 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
565 570 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
580 585 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
595 600 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
610 615 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625 630 635 640

Gly Tyr

<210> 544
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 544

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
50 55 60

Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Ala Cys Asn Thr Ala Tyr

85 90 95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Thr Thr Tyr Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
210 215 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Gly Cys Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
260 265 270

Asn Cys Ala Tyr Trp Ser Asn Gly Cys Asn Cys Cys Asn Thr Thr Tyr
275 280 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Ala
290 295 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Thr His Ala Ala
305 310 315 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
325 330 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
340 345 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala

```
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
```

625 630 635 640

Gly Tyr

<210> 545
<211> 639
<212> PRT
<213> Homo Sapiens

<400> 545

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Met Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
50 55 60

Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Ala Cys Asn Ala Thr His Trp Ser Asn Ala Thr His Thr Ala Tyr
85 90 95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
210 215 220

```
His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Ala Tyr Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn
        275                 280                 285

Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Ala Cys Asn Ala
    290                 295                 300

Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg Met Gly
305                 310                 315                 320

Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn Cys Cys Asn
                325                 330                 335

Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr Thr Tyr Cys
            340                 345                 350

Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala Arg Cys Ala
        355                 360                 365

Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Ala Cys Asn
    370                 375                 380

Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr Gly Tyr Met
385                 390                 395                 400

Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr Tyr Thr Ala
                405                 410                 415

Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn Ala Ala Arg
            420                 425                 430

Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly Thr Asn Gly
        435                 440                 445

Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala Arg Trp Ser
    450                 455                 460

Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg Gly Ala Arg
465                 470                 475                 480

Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys Ala Arg Gly
                485                 490                 495
```

```
Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser Asn Ala Cys
            500                 505                 510

Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
        515                 520                 525

Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp Ser Asn Ala
    530                 535                 540

Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Arg Ala Ala
545                 550                 555                 560

Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr Gly Cys Asn
                565                 570                 575

Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys Ala Tyr Cys
            580                 585                 590

Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Cys Cys
        595                 600                 605

Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn Thr Thr Tyr
    610                 615                 620

Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr Gly Tyr
625                 630                 635


<210>  546
<211>  642
<212>  PRT
<213>  Homo Sapiens

<400>  546

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Ala Thr His Met Gly Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95
```

```
Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Ala Ala Tyr Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
    210                 215                 220

His Met Gly Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Ala Tyr Trp Ser Asn Ala Thr His Cys Cys Asn Met Thr Asn
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Ala
    290                 295                 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365
```

```
Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640
```

Gly Tyr

<210> 547
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 547

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Gly
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Ala Cys Asn Ala Thr His Trp Ser Asn Met Gly Asn Thr Ala Tyr
                85                  90                  95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Met
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
    210                 215                 220
```

```
Asn Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Ala Thr
            260                 265                 270

His Thr Ala Tyr Trp Ser Asn Ala Cys Asn Trp Ser Asn Ala Thr His
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
    290                 295                 300

Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495
```

```
Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr
```

<210> 548
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 548

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Met Gly Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
```

85 90 95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Gly Thr Asn Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Cys Asn Gly Ala Arg Trp Ser Asn Trp Ser Asn Met
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
210 215 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
260 265 270

Asn Thr Ala Tyr Ala Thr His Ala Cys Asn Cys Cys Asn Ala Thr His
275 280 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
290 295 300

Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Thr
305 310 315 320

His Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
325 330 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
340 345 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala

```
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
```

625 630 635 640

Gly Tyr

<210> 549
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 549

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
50 55 60

Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Met Gly Asn Thr Ala Tyr
85 90 95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Ala Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
210 215 220

```
His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Ala Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Ala Tyr Thr Thr Tyr Ala Cys Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
    290                 295                 300

Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495
```

```
Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr
```

<210> 550
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 550

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80
```

```
Arg Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Ala Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Thr Thr
    210                 215                 220

Tyr Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Ala Tyr Thr Thr Tyr Trp Ser Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
    290                 295                 300

Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350
```

```
Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620
```

```
Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640


Gly Tyr



<210>  551
<211>  642
<212>  PRT
<213>  Homo Sapiens

<400>  551

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30


Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45


Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60


Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80


Arg Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95


Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110


Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125


Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140


Thr Ala Tyr Ala Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145                 150                 155                 160


Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175


Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190


Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205
```

```
Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr
    210                 215                 220

Asn Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Trp Ser Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Thr Tyr Thr Ala Tyr Ala Cys Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
    290                 295                 300

Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480
```

```
Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495


Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510


Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525


Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540


Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560


Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575


Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590


Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605


Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620


Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640


Gly Tyr



<210>  552
<211>  642
<212>  PRT
<213>  Homo Sapiens

<400>  552

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30


Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45


Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60


Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
```

65 70 75 80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Met
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
210 215 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
260 265 270

Asn Thr Ala Tyr Thr Thr Tyr Ala Cys Asn Cys Cys Asn Ala Thr His
275 280 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
290 295 300

Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305 310 315 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
325 330 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr

```
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
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610 615 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625 630 635 640

Gly Tyr

<210> 553
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 553

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
50 55 60

Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Ala Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
195 200 205

```
Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Trp Ser Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Thr Tyr Thr Ala Tyr Gly Cys Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
    290                 295                 300

Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480
```

```
Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr
```

<210> 554
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 554

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60
```

```
Cys Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Ala Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Ala Tyr Thr Thr Tyr Ala Cys Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
    290                 295                 300

Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335
```

```
Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605
```

```
Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr
```

<210> 555
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 555

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Cys Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Thr Ala Tyr
                85                  90                  95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Met
145                 150                 155                 160

Thr Asn Gly Ala Arg Ala Cys Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190
```

```
Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270

Tyr Gly Ala Tyr Thr Ala Tyr Met Thr Asn Cys Cys Asn Thr Thr Tyr
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Ala
    290                 295                 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460
```

```
Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr
```

<210> 556
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 556

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Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
```

```
    50                  55                  60

Cys Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Trp Ser Asn
                85                  90                  95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Gly Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Met
145                 150                 155                 160

Thr Asn Gly Ala Arg Ala Cys Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Gly
            260                 265                 270

Tyr Gly Ala Tyr Gly Ala Tyr Met Thr Asn Cys Cys Asn Met Thr Asn
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Ala
    290                 295                 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
```

325 330 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
340 345 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
355 360 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
370 375 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385 390 395 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
405 410 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
420 425 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
435 440 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
450 455 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465 470 475 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
485 490 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
500 505 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
515 520 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
530 535 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545 550 555 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
565 570 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
580 585 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser

595 600 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
610 615 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625 630 635 640

Gly Tyr

<210> 557
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 557

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
50 55 60

Cys Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Gly Ala Tyr Thr Ala Tyr
85 90 95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Met
145 150 155 160

Thr Asn Gly Ala Arg Ala Cys Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

```
Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Tyr Thr Ala
            260                 265                 270

Tyr Gly Ala Tyr Ala Ala Tyr Met Thr Asn Cys Cys Asn Met Thr Asn
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Ala
    290                 295                 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460
```

```
Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr
```

<210> 558
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 558

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45
```

```
Gly Ala Tyr Met Gly Asn Gly Thr Asn Gly Cys Asn Ala Thr His Ala
    50                  55                  60

Cys Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Thr Ala Tyr
                85                  90                  95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Met
145                 150                 155                 160

Thr Asn Gly Ala Arg Ala Cys Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270

Tyr Gly Ala Tyr Ala Ala Tyr Met Thr Asn Cys Cys Asn Met Thr Asn
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Ala
    290                 295                 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320
```

```
Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590
```

```
Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr
```

<210> 559
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 559

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Cys Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Trp Ser Asn
                85                  90                  95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Thr His Met
145                 150                 155                 160

Thr Asn Gly Ala Arg Ala Cys Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175
```

```
Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Ala Arg Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Gly
            260                 265                 270

Tyr Gly Ala Tyr Ala Thr His Met Thr Asn Cys Cys Asn Met Thr Asn
        275                 280                 285

Trp Ser Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Ala
    290                 295                 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445
```

```
Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr


<210>  560
<211>  642
<212>  PRT
<213>  Homo Sapiens

<400>  560

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
```

35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
50 55 60

Cys Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Trp Ser Asn
85 90 95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Met
145 150 155 160

Thr Asn Gly Ala Arg Ala Cys Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Ala Thr
210 215 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Ala Cys Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
260 265 270

Tyr Gly Ala Tyr Ala Ala Tyr Met Thr Asn Cys Cys Asn Met Thr Asn
275 280 285

Gly Cys Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Ala
290 295 300

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Met Gly

305 310 315 320

Asn Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
325 330 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
340 345 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
355 360 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
370 375 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385 390 395 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
405 410 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
420 425 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
435 440 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
450 455 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465 470 475 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
485 490 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
500 505 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
515 520 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
530 535 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545 550 555 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
565 570 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys

580 585 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
595 600 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
610 615 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625 630 635 640

Gly Tyr

<210> 561
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 561

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Gly Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
50 55 60

Cys Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Gly Ala Tyr Ala Thr His Ala Cys Asn Ala Ala Tyr Thr Ala Tyr
85 90 95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Met
145 150 155 160

Thr Asn Gly Ala Arg Ala Cys Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

```
Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270

Tyr Gly Ala Tyr Trp Ser Asn Met Thr Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
    290                 295                 300

Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445
```

```
Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr


<210>  562
<211>  642
<212>  PRT
<213>  Homo Sapiens

<400>  562

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30
```

```
Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Cys Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Thr Ala Tyr
                85                  90                  95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Met Thr Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Cys Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Met
145                 150                 155                 160

Thr Asn Gly Ala Arg Ala Cys Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270

Tyr Gly Ala Tyr Ala Ala Tyr Met Thr Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
    290                 295                 300
```

```
Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575
```

```
Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr
```

<210> 563
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 563

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Cys Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Gly Ala Tyr Thr Ala Tyr
                85                  90                  95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Met
145                 150                 155                 160
```

```
Thr Asn Gly Ala Arg Ala Cys Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Tyr Thr Ala
            260                 265                 270

Tyr Gly Ala Tyr Ala Ala Tyr Met Thr Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
    290                 295                 300

Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
                325                 330                 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
            340                 345                 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
        355                 360                 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
    370                 375                 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385                 390                 395                 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
                405                 410                 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
            420                 425                 430
```

```
Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
        435                 440                 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
    450                 455                 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465                 470                 475                 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
                485                 490                 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
            500                 505                 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
        515                 520                 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
    530                 535                 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545                 550                 555                 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr
                565                 570                 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
            580                 585                 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
        595                 600                 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
    610                 615                 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625                 630                 635                 640

Gly Tyr
```

<210> 564
<211> 642
<212> PRT
<213> Homo Sapiens

<400> 564

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Ala Cys Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Thr
```

```
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Ala
    50                  55                  60

Cys Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Trp Ser Asn
                85                  90                  95

Met Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Met Thr Asn Met Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Met
145                 150                 155                 160

Thr Asn Gly Ala Arg Ala Cys Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Ala Cys Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Met Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Ala Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Tyr Thr Ala
            260                 265                 270

Tyr Gly Ala Tyr Ala Ala Tyr Met Thr Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Ala Cys Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala
```

290 295 300

Cys Asn Met Gly Asn Met Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305 310 315 320

Arg Met Gly Asn Ala Cys Asn Gly Thr Asn Gly Cys Asn Gly Cys Asn
325 330 335

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Ala Thr His Thr
340 345 350

Thr Tyr Cys Cys Asn Cys Cys Asn Trp Ser Asn Gly Ala Tyr Gly Ala
355 360 365

Arg Cys Ala Arg Met Thr Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn
370 375 380

Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Thr
385 390 395 400

Gly Tyr Met Thr Asn Met Thr Asn Ala Ala Tyr Ala Ala Tyr Thr Thr
405 410 415

Tyr Thr Ala Tyr Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Cys Asn
420 425 430

Ala Ala Arg Gly Thr Asn Cys Ala Arg Thr Gly Gly Ala Ala Arg Gly
435 440 445

Thr Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Met Thr Asn Cys Ala
450 455 460

Arg Trp Ser Asn Gly Gly Asn Ala Ala Tyr Trp Ser Asn Cys Ala Arg
465 470 475 480

Gly Ala Arg Trp Ser Asn Gly Thr Asn Ala Cys Asn Gly Ala Arg Cys
485 490 495

Ala Arg Gly Ala Tyr Trp Ser Asn Ala Ala Arg Gly Ala Tyr Trp Ser
500 505 510

Asn Ala Cys Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
515 520 525

Trp Ser Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Trp
530 535 540

Ser Asn Ala Ala Arg Gly Cys Asn Gly Ala Tyr Thr Ala Tyr Gly Ala
545 550 555 560

Arg Ala Ala Arg Cys Ala Tyr Ala Ala Arg Gly Thr Asn Thr Ala Tyr

565 570 575

Gly Cys Asn Thr Gly Tyr Gly Ala Arg Gly Thr Asn Ala Cys Asn Cys
580 585 590

Ala Tyr Cys Ala Arg Gly Gly Asn Met Thr Asn Trp Ser Asn Trp Ser
595 600 605

Asn Cys Cys Asn Gly Thr Asn Ala Cys Asn Ala Ala Arg Trp Ser Asn
610 615 620

Thr Thr Tyr Ala Ala Tyr Met Gly Asn Gly Gly Asn Gly Ala Arg Thr
625 630 635 640

Gly Tyr

<210> 565
<211> 1338
<212> PRT
<213> Homo Sapiens

<400> 565

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
20 25 30

Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Cys Asn
35 40 45

Trp Ser Asn Gly Thr Asn Ala Ala Arg Gly Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Ala Ala Arg Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Ala
65 70 75 80

Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Gly Gly Asn Ala Thr His Trp Ser Asn Thr Gly Gly Gly Thr Asn Met
100 105 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Cys Ala
115 120 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
130 135 140

Gly Gly Asn Thr Gly Gly Ala Thr His Trp Ser Asn Gly Cys Asn Trp
145 150 155 160

```
Ser Asn Ala Ala Tyr Gly Gly Asn Ala Ala Tyr Ala Cys Asn Ala Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Cys Ala Arg Ala Ala Arg Met Thr Asn
            180                 185                 190

Cys Ala Arg Gly Ala Tyr Met Gly Asn Gly Thr Asn Ala Cys Asn Ala
        195                 200                 205

Thr Gly Ala Cys Asn Ala Cys Asn Gly Ala Tyr Ala Cys Asn Trp Ser
    210                 215                 220

Asn Ala Cys Asn Trp Ser Asn Ala Cys Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240

Ala Thr Gly Gly Ala Arg Met Thr Asn Met Gly Asn Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Trp Ser Asn Gly Ala Tyr Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Tyr Ala Ala Tyr Thr
    290                 295                 300

Gly Gly Ala Ala Tyr Thr Ala Tyr Gly Gly Asn Thr Thr Tyr Thr Thr
305                 310                 315                 320

Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg
                325                 330                 335

Gly Gly Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn Gly
            340                 345                 350

Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys
        355                 360                 365

Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn
    370                 375                 380

Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr
385                 390                 395                 400

Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser
                405                 410                 415

Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn
            420                 425                 430
```

```
Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala
        435                 440                 445

Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala
    450                 455                 460

Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn
465                 470                 475                 480

Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met
                485                 490                 495

Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala
            500                 505                 510

Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn
        515                 520                 525

Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met
    530                 535                 540

Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser
545                 550                 555                 560

Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn
                565                 570                 575

Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala
            580                 585                 590

Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly
        595                 600                 605

Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg
    610                 615                 620

Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly
625                 630                 635                 640

Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala
                645                 650                 655

Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn
            660                 665                 670

Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys
        675                 680                 685

Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys
    690                 695                 700
```

```
Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr
705                 710                 715                 720

Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys
                725                 730                 735

Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr
            740                 745                 750

Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn
        755                 760                 765

Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly
    770                 775                 780

Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala
785                 790                 795                 800

Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn
                805                 810                 815

Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly
            820                 825                 830

Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr
        835                 840                 845

Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn
    850                 855                 860

Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys
865                 870                 875                 880

Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr
                885                 890                 895

Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn
            900                 905                 910

Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys
        915                 920                 925

Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly
    930                 935                 940

Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr
945                 950                 955                 960

Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly
                965                 970                 975
```

```
Gly Asn Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr
           980                 985                 990

His Gly Ala Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
       995                 1000                1005

Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1010                1015                1020

Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1025                1030                1035

Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1040                1045                1050

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1055                1060                1065

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1070                1075                1080

Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1085                1090                1095

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1100                1105                1110

Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1115                1120                1125

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1130                1135                1140

Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1145                1150                1155

Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1160                1165                1170

Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1175                1180                1185

Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1190                1195                1200

Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1205                1210                1215

Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1220                1225                1230
```

```
Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1235                 1240                 1245


Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1250                 1255                 1260


Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1265                 1270                 1275


Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1280                 1285                 1290


Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1295                 1300                 1305


Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1310                 1315                 1320


Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1325                 1330                 1335


<210>  566
<211>  1329
<212>  PRT
<213>  Homo Sapiens

<400>  566

Cys Ala Arg Gly Thr Asn Cys Ala Tyr Met Thr Asn Gly Thr Asn Cys
1               5                  10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30


Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Cys Asn
        35                  40                  45


Trp Ser Asn Gly Thr Asn Ala Ala Arg Gly Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Gly Gly Asn Thr Ala
65                  70                  75                  80


Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Gly Gly Asn Cys Ala Tyr
                85                  90                  95


Thr Ala Tyr Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110


Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Cys Ala
        115                 120                 125
```

```
Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140

Gly Gly Asn Thr Gly Gly Ala Thr His Ala Ala Tyr Cys Cys Asn Ala
145                 150                 155                 160

Ala Tyr Trp Ser Asn Gly Gly Asn Gly Gly Asn Ala Cys Asn Ala Ala
                165                 170                 175

Tyr Thr Gly Tyr Gly Cys Asn Cys Ala Arg Ala Ala Arg Thr Thr Tyr
            180                 185                 190

Cys Ala Arg Gly Gly Asn Met Gly Asn Gly Thr Asn Ala Cys Asn Ala
        195                 200                 205

Thr Gly Ala Cys Asn Met Gly Asn Gly Ala Tyr Ala Cys Asn Trp Ser
    210                 215                 220

Asn Ala Thr His Trp Ser Asn Ala Cys Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240

Ala Thr Gly Gly Ala Arg Met Thr Asn Trp Ser Asn Met Gly Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Trp Ser Asn Gly Ala Tyr Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Trp Ser Asn Ala Thr His Gly Cys Asn Gly
    290                 295                 300

Thr Asn Gly Cys Asn Met Thr Asn Gly Ala Tyr Thr Ala Tyr Thr Gly
305                 310                 315                 320

Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Met Thr Asn
                325                 330                 335

Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly
            340                 345                 350

Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys
        355                 360                 365

Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn
    370                 375                 380

Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp
385                 390                 395                 400
```

```
Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys
                405                 410                 415

Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr
            420                 425                 430

Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr
        435                 440                 445

Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys
    450                 455                 460

Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn
465                 470                 475                 480

Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly
                485                 490                 495

Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys
            500                 505                 510

Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn
        515                 520                 525

Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met
    530                 535                 540

Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys
545                 550                 555                 560

Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr
                565                 570                 575

Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr
            580                 585                 590

Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala
        595                 600                 605

Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr
    610                 615                 620

Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala
625                 630                 635                 640

Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly
                645                 650                 655

Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn
            660                 665                 670
```

```
Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys
        675                 680                 685

Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser
    690                 695                 700

Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn
705                 710                 715                 720

Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala
                725                 730                 735

Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly
            740                 745                 750

Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn
        755                 760                 765

Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly
    770                 775                 780

Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys
785                 790                 795                 800

Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr
                805                 810                 815

Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly
            820                 825                 830

Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys
        835                 840                 845

Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn
    850                 855                 860

Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp
865                 870                 875                 880

Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr
                885                 890                 895

Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn
            900                 905                 910

Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met
        915                 920                 925

Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala
    930                 935                 940
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Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn
945                 950                 955                 960


Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys Cys Asn Gly
                965                 970                 975


Cys Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala Arg Ala Cys
            980                 985                 990


Asn Ala Thr His Trp Ser Asn Ala  Ala Arg Ala Cys Asn  Ala Ala Arg
        995                 1000                1005


Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Met Gly Asn  Gly Ala Arg
    1010                1015                1020


Cys Cys  Asn Cys Ala Arg Gly  Thr Asn Thr Ala Tyr  Ala Cys Asn
    1025                1030                1035


Met Thr  Asn Cys Cys Asn Cys  Cys Asn Trp Ser Asn  Met Gly Asn
    1040                1045                1050


Gly Ala  Arg Gly Ala Arg Ala  Thr Gly Ala Cys Asn  Ala Ala Arg
    1055                1060                1065


Ala Ala  Tyr Cys Ala Arg Gly  Thr Asn Trp Ser Asn  Met Thr Asn
    1070                1075                1080


Ala Cys  Asn Thr Gly Tyr Met  Thr Asn Gly Thr Asn  Ala Ala Arg
    1085                1090                1095


Gly Gly  Asn Thr Thr Tyr Thr  Ala Tyr Cys Cys Asn  Trp Ser Asn
    1100                1105                1110


Gly Ala  Tyr Ala Thr His Gly  Cys Asn Gly Thr Asn  Gly Ala Arg
    1115                1120                1125


Thr Gly  Gly Gly Ala Arg Trp  Ser Asn Ala Ala Tyr  Gly Gly Asn
    1130                1135                1140


Cys Ala  Arg Cys Cys Asn Gly  Ala Arg Ala Ala Tyr  Ala Ala Tyr
    1145                1150                1155


Thr Ala  Tyr Ala Ala Arg Ala  Cys Asn Ala Cys Asn  Cys Cys Asn
    1160                1165                1170


Cys Cys  Asn Ala Thr Gly Met  Thr Asn Gly Ala Tyr  Trp Ser Asn
    1175                1180                1185


Gly Ala  Tyr Gly Gly Asn Trp  Ser Asn Thr Thr Tyr  Thr Thr Tyr
    1190                1195                1200
```

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Met Thr  Asn Thr Ala Tyr Trp  Ser Asn Ala Ala Arg  Met Thr Asn
    1205                 1210                 1215


Ala Cys  Asn Gly Thr Asn Gly  Ala Tyr Ala Ala Arg  Trp Ser Asn
    1220                 1225                 1230


Met Gly  Asn Thr Gly Gly Cys  Ala Arg Cys Ala Arg  Gly Gly Asn
    1235                 1240                 1245


Ala Ala  Tyr Gly Thr Asn Thr  Thr Tyr Trp Ser Asn  Thr Gly Tyr
    1250                 1255                 1260


Trp Ser  Asn Gly Thr Asn Ala  Thr Gly Cys Ala Tyr  Gly Ala Arg
    1265                 1270                 1275


Gly Cys  Asn Met Thr Asn Cys  Ala Tyr Ala Ala Tyr  Cys Ala Tyr
    1280                 1285                 1290


Thr Ala  Tyr Ala Cys Asn Cys  Ala Arg Ala Ala Arg  Trp Ser Asn
    1295                 1300                 1305


Met Thr  Asn Trp Ser Asn Met  Thr Asn Trp Ser Asn  Cys Cys Asn
    1310                 1315                 1320


Gly Gly  Asn Ala Ala Arg
    1325


<210>  567
<211>  1329
<212>  PRT
<213>  Homo Sapiens

<400>  567

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Cys
1               5                  10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30


Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Cys Asn
        35                  40                  45


Trp Ser Asn Gly Thr Asn Ala Ala Arg Gly Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Ala Ala Arg Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Ala
65                  70                  75                  80


Tyr Ala Cys Asn Thr Thr Tyr Ala Cys Asn Gly Gly Asn Thr Ala Tyr
                85                  90                  95
```

```
Thr Ala Tyr Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Cys Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140

Gly Gly Asn Thr Gly Gly Ala Thr His Ala Ala Tyr Cys Cys Asn Ala
145                 150                 155                 160

Ala Tyr Trp Ser Asn Gly Gly Asn Gly Gly Asn Ala Cys Asn Ala Ala
                165                 170                 175

Tyr Cys Ala Tyr Ala Cys Asn Cys Ala Arg Ala Ala Arg Thr Thr Tyr
            180                 185                 190

Cys Ala Arg Gly Gly Asn Met Gly Asn Gly Thr Asn Ala Cys Asn Ala
        195                 200                 205

Thr Gly Ala Cys Asn Met Gly Asn Gly Ala Tyr Ala Cys Asn Trp Ser
    210                 215                 220

Asn Ala Thr His Trp Ser Asn Ala Cys Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240

Ala Thr Gly Gly Ala Arg Met Thr Asn Trp Ser Asn Met Gly Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Trp Ser Asn Gly Ala Tyr Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Trp Ser Asn Ala Thr His Gly Cys Asn Gly
    290                 295                 300

Thr Asn Gly Cys Asn Met Thr Asn Gly Ala Tyr Thr Ala Tyr Thr Gly
305                 310                 315                 320

Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Met Thr Asn
                325                 330                 335

Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly
            340                 345                 350

Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys
        355                 360                 365
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Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn
    370                 375                 380

Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp
385                 390                 395                 400

Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys
                405                 410                 415

Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr
            420                 425                 430

Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr
        435                 440                 445

Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys
    450                 455                 460

Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn
465                 470                 475                 480

Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly
                485                 490                 495

Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys
            500                 505                 510

Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn
        515                 520                 525

Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met
    530                 535                 540

Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys
545                 550                 555                 560

Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr
                565                 570                 575

Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr
            580                 585                 590

Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala
        595                 600                 605

Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr
    610                 615                 620

Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala
625                 630                 635                 640
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```
Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly
                645                 650                 655

Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn
            660                 665                 670

Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys
        675                 680                 685

Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser
    690                 695                 700

Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn
705                 710                 715                 720

Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala
                725                 730                 735

Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly
            740                 745                 750

Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn
        755                 760                 765

Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly
    770                 775                 780

Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys
785                 790                 795                 800

Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr
                805                 810                 815

Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly
            820                 825                 830

Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys
        835                 840                 845

Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn
    850                 855                 860

Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp
865                 870                 875                 880

Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr
                885                 890                 895

Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn
            900                 905                 910
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```
Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met
        915                 920                 925

Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala
    930                 935                 940

Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn
945                 950                 955                 960

Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys Cys Asn Gly
                965                 970                 975

Cys Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala Arg Ala Cys
            980                 985                 990

Asn Ala Thr His Trp Ser Asn Ala  Ala Arg Ala Cys Asn  Ala Ala Arg
        995                 1000                1005

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Met Gly Asn  Gly Ala Arg
    1010                1015                1020

Cys Cys  Asn Cys Ala Arg Gly  Thr Asn Thr Ala Tyr  Ala Cys Asn
    1025                1030                1035

Met Thr  Asn Cys Cys Asn Cys  Cys Asn Trp Ser Asn  Met Gly Asn
    1040                1045                1050

Gly Ala  Arg Gly Ala Arg Ala  Thr Gly Ala Cys Asn  Ala Ala Arg
    1055                1060                1065

Ala Ala  Tyr Cys Ala Arg Gly  Thr Asn Trp Ser Asn  Met Thr Asn
    1070                1075                1080

Ala Cys  Asn Thr Gly Tyr Met  Thr Asn Gly Thr Asn  Ala Ala Arg
    1085                1090                1095

Gly Gly  Asn Thr Thr Tyr Thr  Ala Tyr Cys Cys Asn  Trp Ser Asn
    1100                1105                1110

Gly Ala  Tyr Ala Thr His Gly  Cys Asn Gly Thr Asn  Gly Ala Arg
    1115                1120                1125

Thr Gly  Gly Gly Ala Arg Trp  Ser Asn Ala Ala Tyr  Gly Gly Asn
    1130                1135                1140

Cys Ala  Arg Cys Cys Asn Gly  Ala Arg Ala Ala Tyr  Ala Ala Tyr
    1145                1150                1155

Thr Ala  Tyr Ala Ala Arg Ala  Cys Asn Ala Cys Asn  Cys Cys Asn
    1160                1165                1170
```

```
Cys Cys  Asn Ala Thr Gly Met  Thr Asn Gly Ala Tyr  Trp Ser Asn
    1175                1180                1185


Gly Ala  Tyr Gly Gly Asn Trp  Ser Asn Thr Thr Tyr  Thr Thr Tyr
    1190                1195                1200


Met Thr  Asn Thr Ala Tyr Trp  Ser Asn Ala Ala Arg  Met Thr Asn
    1205                1210                1215


Ala Cys  Asn Gly Thr Asn Gly  Ala Tyr Ala Ala Arg  Trp Ser Asn
    1220                1225                1230


Met Gly  Asn Thr Gly Gly Cys  Ala Arg Cys Ala Arg  Gly Gly Asn
    1235                1240                1245


Ala Ala  Tyr Gly Thr Asn Thr  Thr Tyr Trp Ser Asn  Thr Gly Tyr
    1250                1255                1260


Trp Ser  Asn Gly Thr Asn Ala  Thr Gly Cys Ala Tyr  Gly Ala Arg
    1265                1270                1275


Gly Cys  Asn Met Thr Asn Cys  Ala Tyr Ala Ala Tyr  Cys Ala Tyr
    1280                1285                1290


Thr Ala  Tyr Ala Cys Asn Cys  Ala Arg Ala Ala Arg  Trp Ser Asn
    1295                1300                1305


Met Thr  Asn Trp Ser Asn Met  Thr Asn Trp Ser Asn  Cys Cys Asn
    1310                1315                1320


Gly Gly  Asn Ala Ala Arg
    1325


<210>  568
<211>  1344
<212>  PRT
<213>  Homo Sapiens

<400>  568

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30


Asn Met Gly Asn Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Cys Asn
        35                  40                  45


Trp Ser Asn Gly Thr Asn Ala Ala Arg Gly Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Gly Gly Asn Thr Ala
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65                  70                  75                  80

Tyr Ala Cys Asn Met Thr Asn Ala Cys Asn Gly Ala Arg Met Thr Asn
                85                  90                  95

Trp Ser Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140

Gly Gly Asn Trp Ser Asn Thr Thr Tyr Gly Ala Tyr Cys Cys Asn Gly
145                 150                 155                 160

Ala Arg Gly Ala Tyr Gly Gly Asn Gly Ala Arg Ala Cys Asn Ala Thr
                165                 170                 175

His Thr Ala Tyr Gly Cys Asn Cys Ala Arg Ala Ala Arg Thr Thr Tyr
            180                 185                 190

Cys Ala Arg Gly Gly Asn Met Gly Asn Gly Thr Asn Ala Cys Asn Ala
        195                 200                 205

Thr Gly Met Thr Asn Gly Ala Arg Gly Ala Tyr Ala Cys Asn Trp Ser
    210                 215                 220

Asn Ala Cys Asn Gly Ala Tyr Ala Cys Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240

Ala Thr Gly Gly Ala Arg Met Thr Asn Trp Ser Asn Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Trp Ser Asn Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Ala Cys Asn Gly Ala Arg Gly Gly Asn Gly Ala Tyr Gly
    290                 295                 300

Gly Asn Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly Gly
                325                 330                 335

Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala Cys Asn Gly
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            340                 345                 350

Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys
        355                 360                 365

Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn
    370                 375                 380

Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly
385                 390                 395                 400

Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser
                405                 410                 415

Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn
            420                 425                 430

Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met
        435                 440                 445

Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr
    450                 455                 460

Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn
465                 470                 475                 480

Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly
                485                 490                 495

Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly
            500                 505                 510

Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn
        515                 520                 525

Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp
    530                 535                 540

Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr
545                 550                 555                 560

Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn
                565                 570                 575

Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr
            580                 585                 590

Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala
        595                 600                 605

Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr
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610 615 620

Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala
625 630 635 640

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys
645 650 655

Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr
660 665 670

Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys
675 680 685

Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys
690 695 700

Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn
705 710 715 720

Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys
725 730 735

Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys
740 745 750

Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn
755 760 765

Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr
770 775 780

Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr
785 790 795 800

Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn
805 810 815

Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr
820 825 830

Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr
835 840 845

Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn
850 855 860

Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly
865 870 875 880

Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser

885 890 895

Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn
900 905 910

Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly
915 920 925

Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr
930 935 940

Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr
945 950 955 960

Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala
965 970 975

Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys Cys Asn Gly Cys
980 985 990

Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala Arg Ala Cys Asn
995 1000 1005

Ala Thr His Trp Ser Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg
1010 1015 1020

Gly Gly Asn Cys Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg
1025 1030 1035

Cys Cys Asn Cys Ala Arg Gly Thr Asn Thr Ala Tyr Ala Cys Asn
1040 1045 1050

Met Thr Asn Cys Cys Asn Cys Cys Asn Trp Ser Asn Met Gly Asn
1055 1060 1065

Gly Ala Arg Gly Ala Arg Ala Thr Gly Ala Cys Asn Ala Ala Arg
1070 1075 1080

Ala Ala Tyr Cys Ala Arg Gly Thr Asn Trp Ser Asn Met Thr Asn
1085 1090 1095

Ala Cys Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg
1100 1105 1110

Gly Gly Asn Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Trp Ser Asn
1115 1120 1125

Gly Ala Tyr Ala Thr His Gly Cys Asn Gly Thr Asn Gly Ala Arg
1130 1135 1140

Thr Gly Gly Gly Ala Arg Trp Ser Asn Ala Ala Tyr Gly Gly Asn

1145 1150 1155

Cys Ala Arg Cys Cys Asn Gly Ala Arg Ala Ala Tyr Ala Ala Tyr
1160 1165 1170

Thr Ala Tyr Ala Ala Arg Ala Cys Asn Ala Cys Asn Cys Cys Asn
1175 1180 1185

Cys Cys Asn Ala Thr Gly Met Thr Asn Gly Ala Tyr Trp Ser Asn
1190 1195 1200

Gly Ala Tyr Gly Gly Asn Trp Ser Asn Thr Thr Tyr Thr Thr Tyr
1205 1210 1215

Met Thr Asn Thr Ala Tyr Trp Ser Asn Ala Ala Arg Met Thr Asn
1220 1225 1230

Ala Cys Asn Gly Thr Asn Gly Ala Tyr Ala Ala Arg Trp Ser Asn
1235 1240 1245

Met Gly Asn Thr Gly Gly Cys Ala Arg Cys Ala Arg Gly Gly Asn
1250 1255 1260

Ala Ala Tyr Gly Thr Asn Thr Thr Tyr Trp Ser Asn Thr Gly Tyr
1265 1270 1275

Trp Ser Asn Gly Thr Asn Ala Thr Gly Cys Ala Tyr Gly Ala Arg
1280 1285 1290

Gly Cys Asn Met Thr Asn Cys Ala Tyr Ala Ala Tyr Cys Ala Tyr
1295 1300 1305

Thr Ala Tyr Ala Cys Asn Cys Ala Arg Ala Ala Arg Trp Ser Asn
1310 1315 1320

Met Thr Asn Trp Ser Asn Met Thr Asn Trp Ser Asn Cys Cys Asn
1325 1330 1335

Gly Gly Asn Ala Ala Arg
1340

<210> 569
<211> 1344
<212> PRT
<213> Homo Sapiens

<400> 569

Cys Ala Arg Gly Thr Asn Ala Cys Asn Met Thr Asn Ala Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Thr Asn Met Thr
20 25 30

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Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Ala Cys Asn Gly Ala Arg
        35                  40                  45

Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60

Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Ala Ala Tyr Gly Cys Asn
                85                  90                  95

Met Gly Asn Ala Thr Gly Gly Gly Asn Gly Thr Asn Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Met Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Met Thr Asn Gly Cys Asn Cys Ala Tyr Ala Thr His Thr
145                 150                 155                 160

Thr Tyr Trp Ser Asn Ala Ala Tyr Gly Ala Tyr Gly Ala Arg Ala Ala
                165                 170                 175

Arg Trp Ser Asn Thr Ala Tyr Trp Ser Asn Ala Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Met Thr Asn Ala
        195                 200                 205

Cys Asn Ala Thr His Trp Ser Asn Ala Ala Arg Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Trp Ser Asn Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Met Thr Asn Ala Cys Asn Ala Thr Gly Ala Cys Asn Ala
                245                 250                 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Ala Cys Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Ala Thr Gly Thr Ala Tyr Trp
    290                 295                 300
```

```
Ser Asn Trp Ser Asn Gly Gly Asn Thr Gly Gly Thr Ala Tyr Gly Gly
305                 310                 315                 320

Asn Gly Thr Asn Thr Thr Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly
                325                 330                 335

Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Met Thr Asn Gly
            340                 345                 350

Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys
        355                 360                 365

Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn
    370                 375                 380

Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly
385                 390                 395                 400

Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser
                405                 410                 415

Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn
            420                 425                 430

Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met
        435                 440                 445

Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr
    450                 455                 460

Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn
465                 470                 475                 480

Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly
                485                 490                 495

Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly
            500                 505                 510

Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn
        515                 520                 525

Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp
    530                 535                 540

Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr
545                 550                 555                 560

Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn
                565                 570                 575
```

```
Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr
            580                 585                 590

Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala
        595                 600                 605

Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr
    610                 615                 620

Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala
625                 630                 635                 640

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys
                645                 650                 655

Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr
            660                 665                 670

Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys
        675                 680                 685

Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys
    690                 695                 700

Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn
705                 710                 715                 720

Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys
                725                 730                 735

Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys
            740                 745                 750

Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn
        755                 760                 765

Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr
    770                 775                 780

Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr
785                 790                 795                 800

Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn
                805                 810                 815

Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr
            820                 825                 830

Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr
        835                 840                 845
```

```
Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn
    850                 855                 860

Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly
865                 870                 875                 880

Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser
                885                 890                 895

Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn
            900                 905                 910

Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly
        915                 920                 925

Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr
    930                 935                 940

Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr
945                 950                 955                 960

Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala
                965                 970                 975

Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys Cys Asn Gly Cys
            980                 985                 990

Asn Cys Cys Asn Ala Thr His Gly  Ala Arg Ala Ala Arg  Ala Cys Asn
        995                 1000                1005

Ala Thr  His Trp Ser Asn Ala  Ala Arg Ala Cys Asn  Ala Ala Arg
    1010                1015                1020

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Met Gly Asn  Gly Ala Arg
    1025                1030                1035

Cys Cys  Asn Cys Ala Arg Gly  Thr Asn Thr Ala Tyr  Ala Cys Asn
    1040                1045                1050

Met Thr  Asn Cys Cys Asn Cys  Cys Asn Trp Ser Asn  Met Gly Asn
    1055                1060                1065

Gly Ala  Arg Gly Ala Arg Ala  Thr Gly Ala Cys Asn  Ala Ala Arg
    1070                1075                1080

Ala Ala  Tyr Cys Ala Arg Gly  Thr Asn Trp Ser Asn  Met Thr Asn
    1085                1090                1095

Ala Cys  Asn Thr Gly Tyr Met  Thr Asn Gly Thr Asn  Ala Ala Arg
    1100                1105                1110
```

```
Gly Gly  Asn Thr Thr Tyr Thr  Ala Tyr Cys Cys Asn  Trp Ser Asn
    1115                 1120                 1125

Gly Ala  Tyr Ala Thr His Gly  Cys Asn Gly Thr Asn  Gly Ala Arg
    1130                 1135                 1140

Thr Gly  Gly Gly Ala Arg Trp  Ser Asn Ala Ala Tyr  Gly Gly Asn
    1145                 1150                 1155

Cys Ala  Arg Cys Cys Asn Gly  Ala Arg Ala Ala Tyr  Ala Ala Tyr
    1160                 1165                 1170

Thr Ala  Tyr Ala Ala Arg Ala  Cys Asn Ala Cys Asn  Cys Cys Asn
    1175                 1180                 1185

Cys Cys  Asn Ala Thr Gly Met  Thr Asn Gly Ala Tyr  Trp Ser Asn
    1190                 1195                 1200

Gly Ala  Tyr Gly Gly Asn Trp  Ser Asn Thr Thr Tyr  Thr Thr Tyr
    1205                 1210                 1215

Met Thr  Asn Thr Ala Tyr Trp  Ser Asn Ala Ala Arg  Met Thr Asn
    1220                 1225                 1230

Ala Cys  Asn Gly Thr Asn Gly  Ala Tyr Ala Ala Arg  Trp Ser Asn
    1235                 1240                 1245

Met Gly  Asn Thr Gly Gly Cys  Ala Arg Cys Ala Arg  Gly Gly Asn
    1250                 1255                 1260

Ala Ala  Tyr Gly Thr Asn Thr  Thr Tyr Trp Ser Asn  Thr Gly Tyr
    1265                 1270                 1275

Trp Ser  Asn Gly Thr Asn Ala  Thr Gly Cys Ala Tyr  Gly Ala Arg
    1280                 1285                 1290

Gly Cys  Asn Met Thr Asn Cys  Ala Tyr Ala Ala Tyr  Cys Ala Tyr
    1295                 1300                 1305

Thr Ala  Tyr Ala Cys Asn Cys  Ala Arg Ala Ala Arg  Trp Ser Asn
    1310                 1315                 1320

Met Thr  Asn Trp Ser Asn Met  Thr Asn Trp Ser Asn  Cys Cys Asn
    1325                 1330                 1335

Gly Gly  Asn Ala Ala Arg
    1340
```

<210> 570
<211> 1347

<212> PRT
<213> Homo Sapiens

<400> 570

```
Cys Ala Arg Gly Thr Asn Ala Cys Asn Met Thr Asn Ala Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Thr Asn Met Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Ala Cys Asn Gly Ala Arg
        35                  40                  45

Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60

Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Ala Ala Tyr Gly Cys Asn
                85                  90                  95

Met Gly Asn Ala Thr Gly Gly Gly Asn Gly Thr Asn Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Met Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Met Thr Asn Gly Thr Asn Met Thr Asn Ala Thr His Thr
145                 150                 155                 160

Thr Tyr Trp Ser Asn Ala Ala Tyr Gly Ala Tyr Gly Ala Arg Ala Ala
                165                 170                 175

Arg Trp Ser Asn Thr Ala Tyr Trp Ser Asn Ala Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Met Thr Asn Ala
        195                 200                 205

Cys Asn Ala Thr His Trp Ser Asn Ala Ala Arg Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Trp Ser Asn Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Met Thr Asn Ala Cys Asn Ala Thr Gly Ala Cys Asn Ala
                245                 250                 255
```

```
Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Ala Cys Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Thr Asn Thr Ala Tyr Trp
    290                 295                 300

Ser Asn Trp Ser Asn Gly Gly Asn Thr Gly Gly Trp Ser Asn Thr Thr
305                 310                 315                 320

Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
                325                 330                 335

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala
            340                 345                 350

Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser
        355                 360                 365

Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn
    370                 375                 380

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met
385                 390                 395                 400

Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly
                405                 410                 415

Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn
            420                 425                 430

Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr
        435                 440                 445

Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala
    450                 455                 460

Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn
465                 470                 475                 480

Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser
            500                 505                 510

Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr
        515                 520                 525
```

```
Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp
    530                 535                 540

Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser
545                 550                 555                 560

Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn
                565                 570                 575

Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala
            580                 585                 590

Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys
        595                 600                 605

Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn
    610                 615                 620

Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala
625                 630                 635                 640

Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala
                645                 650                 655

Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg
            660                 665                 670

Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys
        675                 680                 685

Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys
    690                 695                 700

Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn
705                 710                 715                 720

Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys
                725                 730                 735

Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala
            740                 745                 750

Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn
        755                 760                 765

Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala
    770                 775                 780

Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala
785                 790                 795                 800
```

```
Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr
                805                 810                 815

Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala
            820                 825                 830

Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly
        835                 840                 845

Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr
    850                 855                 860

Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met
865                 870                 875                 880

Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala
                885                 890                 895

Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn
            900                 905                 910

Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly
        915                 920                 925

Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly
    930                 935                 940

Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg
945                 950                 955                 960

Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp
                965                 970                 975

Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys Cys
            980                 985                 990

Asn Gly Cys Asn Cys Cys Asn Ala  Thr His Gly Ala Arg  Ala Ala Arg
        995                 1000                1005

Ala Cys  Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
    1010                1015                1020

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
    1025                1030                1035

Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1040                1045                1050

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1055                1060                1065
```

```
Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1070                 1075                 1080

Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1085                 1090                 1095

Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1100                 1105                 1110

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1115                 1120                 1125

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
    1130                 1135                 1140

Gly Ala  Arg Thr Gly Gly Gly  Ala Arg Trp Ser Asn  Ala Ala Tyr
    1145                 1150                 1155

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Gly Ala Arg  Ala Ala Tyr
    1160                 1165                 1170

Ala Ala  Tyr Thr Ala Tyr Ala  Ala Arg Ala Cys Asn  Ala Cys Asn
    1175                 1180                 1185

Cys Cys  Asn Cys Cys Asn Ala  Thr Gly Met Thr Asn  Gly Ala Tyr
    1190                 1195                 1200

Trp Ser  Asn Gly Ala Tyr Gly  Gly Asn Trp Ser Asn  Thr Thr Tyr
    1205                 1210                 1215

Thr Thr  Tyr Met Thr Asn Thr  Ala Tyr Trp Ser Asn  Ala Ala Arg
    1220                 1225                 1230

Met Thr  Asn Ala Cys Asn Gly  Thr Asn Gly Ala Tyr  Ala Ala Arg
    1235                 1240                 1245

Trp Ser  Asn Met Gly Asn Thr  Gly Gly Cys Ala Arg  Cys Ala Arg
    1250                 1255                 1260

Gly Gly  Asn Ala Ala Tyr Gly  Thr Asn Thr Thr Tyr  Trp Ser Asn
    1265                 1270                 1275

Thr Gly  Tyr Trp Ser Asn Gly  Thr Asn Ala Thr Gly  Cys Ala Tyr
    1280                 1285                 1290

Gly Ala  Arg Gly Cys Asn Met  Thr Asn Cys Ala Tyr  Ala Ala Tyr
    1295                 1300                 1305

Cys Ala  Tyr Thr Ala Tyr Ala  Cys Asn Cys Ala Arg  Ala Ala Arg
    1310                 1315                 1320
```

```
Trp Ser  Asn Met Thr Asn Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1325                 1330                 1335


Cys Cys  Asn Gly Gly Asn Ala  Ala Arg
    1340                 1345


<210>  571
<211>  1332
<212>  PRT
<213>  Homo Sapiens

<400>  571

Cys Ala Arg Ala Thr His Ala Cys Asn Met Thr Asn Ala Ala Arg Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Ala Cys Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Ala Cys Asn Cys Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60


Gly Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80


Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Ala Cys Asn Gly Gly Asn
                85                  90                  95


Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
            100                 105                 110


Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125


Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Met Thr Asn Gly Ala Arg
    130                 135                 140


Thr Gly Gly Met Thr Asn Gly Cys Asn Met Thr Asn Ala Thr His Thr
145                 150                 155                 160


Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Ala Tyr Gly Ala Tyr Ala Ala
                165                 170                 175


Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
            180                 185                 190


Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Met Thr Asn Ala
        195                 200                 205
```

```
Cys Asn Ala Thr His Ala Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Met Thr Asn Ala Cys Asn Ala Thr Gly Ala Cys Asn Ala
                245                 250                 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Ala Cys Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Met Gly Asn Gly
    290                 295                 300

Ala Arg Met Thr Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn
                325                 330                 335

Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp
            340                 345                 350

Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly
        355                 360                 365

Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn
    370                 375                 380

Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met
385                 390                 395                 400

Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser
                405                 410                 415

Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn
            420                 425                 430

Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr
        435                 440                 445

Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr
    450                 455                 460

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr
465                 470                 475                 480
```

```
Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr
            500                 505                 510

Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg
        515                 520                 525

Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp
    530                 535                 540

Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr
545                 550                 555                 560

Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala
            580                 585                 590

Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr
        595                 600                 605

Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn
    610                 615                 620

Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala
625                 630                 635                 640

Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala
                645                 650                 655

Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr
            660                 665                 670

Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys
        675                 680                 685

Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys
    690                 695                 700

Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr
705                 710                 715                 720

Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly
                725                 730                 735

Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser
            740                 745                 750
```

```
Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn
        755                 760                 765

Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly
    770                 775                 780

Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala
785                 790                 795                 800

Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr
                805                 810                 815

Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly
            820                 825                 830

Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala
        835                 840                 845

Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn
    850                 855                 860

Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala
865                 870                 875                 880

Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr
                885                 890                 895

Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn
            900                 905                 910

Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr
        915                 920                 925

Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala
    930                 935                 940

Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn
945                 950                 955                 960

Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys
                965                 970                 975

Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala
            980                 985                 990

Arg Ala Cys Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
        995                 1000                1005

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
    1010                1015                1020
```

```
Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1025                 1030                 1035

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1040                 1045                 1050

Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1055                 1060                 1065

Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1070                 1075                 1080

Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1085                 1090                 1095

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1100                 1105                 1110

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
    1115                 1120                 1125

Gly Ala  Arg Thr Gly Gly Gly  Ala Arg Trp Ser Asn  Ala Ala Tyr
    1130                 1135                 1140

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Gly Ala Arg  Ala Ala Tyr
    1145                 1150                 1155

Ala Ala  Tyr Thr Ala Tyr Ala  Ala Arg Ala Cys Asn  Ala Cys Asn
    1160                 1165                 1170

Cys Cys  Asn Cys Cys Asn Ala  Thr Gly Met Thr Asn  Gly Ala Tyr
    1175                 1180                 1185

Trp Ser  Asn Gly Ala Tyr Gly  Gly Asn Trp Ser Asn  Thr Thr Tyr
    1190                 1195                 1200

Thr Thr  Tyr Met Thr Asn Thr  Ala Tyr Trp Ser Asn  Ala Ala Arg
    1205                 1210                 1215

Met Thr  Asn Ala Cys Asn Gly  Thr Asn Gly Ala Tyr  Ala Ala Arg
    1220                 1225                 1230

Trp Ser  Asn Met Gly Asn Thr  Gly Gly Cys Ala Arg  Cys Ala Arg
    1235                 1240                 1245

Gly Gly  Asn Ala Ala Tyr Gly  Thr Asn Thr Thr Tyr  Trp Ser Asn
    1250                 1255                 1260

Thr Gly  Tyr Trp Ser Asn Gly  Thr Asn Ala Thr Gly  Cys Ala Tyr
    1265                 1270                 1275
```

```
Gly Ala  Arg Gly Cys Asn Met  Thr Asn Cys Ala Tyr  Ala Ala Tyr
    1280                1285                1290


Cys Ala  Tyr Thr Ala Tyr Ala  Cys Asn Cys Ala Arg  Ala Ala Arg
    1295                1300                1305


Trp Ser  Asn Met Thr Asn Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1310                1315                1320


Cys Cys  Asn Gly Gly Asn Ala  Ala Arg
    1325                1330


<210>  572
<211>  1332
<212>  PRT
<213>  Homo Sapiens

<400>  572

Cys Ala Arg Ala Thr His Ala Cys Asn Met Thr Asn Ala Ala Arg Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Ala Cys Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Ala Cys Asn Cys Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60


Gly Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80


Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Ala Cys Asn Gly Gly Asn
                85                  90                  95


Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
            100                 105                 110


Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125


Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Met Thr Asn Gly Ala Arg
    130                 135                 140


Thr Gly Gly Met Thr Asn Gly Cys Asn Met Thr Asn Ala Thr His Thr
145                 150                 155                 160


Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Ala Tyr Gly Ala Tyr Ala Ala
                165                 170                 175


Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
```

180 185 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Met Thr Asn Ala
195 200 205

Cys Asn Ala Thr His Ala Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys
210 215 220

Asn Trp Ser Asn Ala Ala Arg Ala Cys Asn Cys Ala Arg Gly Thr Asn
225 230 235 240

Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Ala Cys Asn Gly
245 250 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
260 265 270

Tyr Ala Cys Asn Gly Cys Asn Ala Cys Asn Thr Ala Tyr Thr Ala Tyr
275 280 285

Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Ala Ala Tyr Thr
290 295 300

Gly Gly Ala Cys Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
305 310 315 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn
325 330 335

Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp
340 345 350

Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly
355 360 365

Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn
370 375 380

Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met
385 390 395 400

Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser
405 410 415

Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn
420 425 430

Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr
435 440 445

Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr

```
    450                 455                 460

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr
            500                 505                 510

Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg
        515                 520                 525

Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp
    530                 535                 540

Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr
545                 550                 555                 560

Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala
            580                 585                 590

Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr
        595                 600                 605

Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn
    610                 615                 620

Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala
625                 630                 635                 640

Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala
                645                 650                 655

Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr
            660                 665                 670

Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys
        675                 680                 685

Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys
    690                 695                 700

Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr
705                 710                 715                 720

Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly
```

725 730 735

Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser
740 745 750

Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn
755 760 765

Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly
770 775 780

Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala
785 790 795 800

Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr
805 810 815

Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly
820 825 830

Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala
835 840 845

Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn
850 855 860

Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala
865 870 875 880

Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr
885 890 895

Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn
900 905 910

Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr
915 920 925

Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala
930 935 940

Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn
945 950 955 960

Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys
965 970 975

Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala
980 985 990

Arg Ala Cys Asn Ala Thr His Trp Ser Asn Ala Ala Arg Ala Cys Asn

995 1000 1005

Ala Ala Arg Gly Gly Asn Cys Ala Arg Cys Cys Asn Met Gly Asn
1010 1015 1020

Gly Ala Arg Cys Cys Asn Cys Ala Arg Gly Thr Asn Thr Ala Tyr
1025 1030 1035

Ala Cys Asn Met Thr Asn Cys Cys Asn Cys Cys Asn Trp Ser Asn
1040 1045 1050

Met Gly Asn Gly Ala Arg Gly Ala Arg Ala Thr Gly Ala Cys Asn
1055 1060 1065

Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn Trp Ser Asn
1070 1075 1080

Met Thr Asn Ala Cys Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn
1085 1090 1095

Ala Ala Arg Gly Gly Asn Thr Thr Tyr Thr Ala Tyr Cys Cys Asn
1100 1105 1110

Trp Ser Asn Gly Ala Tyr Ala Thr His Gly Cys Asn Gly Thr Asn
1115 1120 1125

Gly Ala Arg Thr Gly Gly Gly Ala Arg Trp Ser Asn Ala Ala Tyr
1130 1135 1140

Gly Gly Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Ala Ala Tyr
1145 1150 1155

Ala Ala Tyr Thr Ala Tyr Ala Ala Arg Ala Cys Asn Ala Cys Asn
1160 1165 1170

Cys Cys Asn Cys Cys Asn Ala Thr Gly Met Thr Asn Gly Ala Tyr
1175 1180 1185

Trp Ser Asn Gly Ala Tyr Gly Gly Asn Trp Ser Asn Thr Thr Tyr
1190 1195 1200

Thr Thr Tyr Met Thr Asn Thr Ala Tyr Trp Ser Asn Ala Ala Arg
1205 1210 1215

Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Ala Tyr Ala Ala Arg
1220 1225 1230

Trp Ser Asn Met Gly Asn Thr Gly Gly Cys Ala Arg Cys Ala Arg
1235 1240 1245

Gly Gly Asn Ala Ala Tyr Gly Thr Asn Thr Thr Tyr Trp Ser Asn

1250 1255 1260

Thr Gly Tyr Trp Ser Asn Gly Thr Asn Ala Thr Gly Cys Ala Tyr
1265 1270 1275

Gly Ala Arg Gly Cys Asn Met Thr Asn Cys Ala Tyr Ala Ala Tyr
1280 1285 1290

Cys Ala Tyr Thr Ala Tyr Ala Cys Asn Cys Ala Arg Ala Ala Arg
1295 1300 1305

Trp Ser Asn Met Thr Asn Trp Ser Asn Met Thr Asn Trp Ser Asn
1310 1315 1320

Cys Cys Asn Gly Gly Asn Ala Ala Arg
1325 1330

<210> 573
<211> 1332
<212> PRT
<213> Homo Sapiens

<400> 573

Cys Ala Arg Ala Thr His Ala Cys Asn Met Thr Asn Ala Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Ala Cys Asn Met Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Ala Cys Asn Cys Ala Arg
35 40 45

Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Thr
50 55 60

Gly Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
65 70 75 80

Tyr Trp Ser Asn Met Thr Asn Ala Ala Tyr Ala Cys Asn Gly Gly Asn
85 90 95

Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
100 105 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
115 120 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Met Thr Asn Gly Ala Arg
130 135 140

Thr Gly Gly Met Thr Asn Gly Cys Asn Met Thr Asn Ala Thr His Thr
145 150 155 160

```
Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Ala Tyr Gly Ala Tyr Ala Ala
                165                 170                 175

Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Met Thr Asn Ala
        195                 200                 205

Cys Asn Ala Thr His Ala Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Met Thr Asn Ala Cys Asn Ala Thr Gly Ala Cys Asn Ala
                245                 250                 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Ala Cys Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Met Thr Asn Gly
    290                 295                 300

Ala Arg Met Thr Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn
                325                 330                 335

Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp
            340                 345                 350

Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly
        355                 360                 365

Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn
    370                 375                 380

Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met
385                 390                 395                 400

Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser
                405                 410                 415

Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn
            420                 425                 430
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```
Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr
        435                 440                 445

Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr
    450                 455                 460

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr
            500                 505                 510

Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg
        515                 520                 525

Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp
    530                 535                 540

Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr
545                 550                 555                 560

Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala
            580                 585                 590

Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr
        595                 600                 605

Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn
    610                 615                 620

Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala
625                 630                 635                 640

Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala
                645                 650                 655

Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr
            660                 665                 670

Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys
        675                 680                 685

Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys
    690                 695                 700
```

```
Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr
705                 710                 715                 720

Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly
                725                 730                 735

Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser
            740                 745                 750

Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn
        755                 760                 765

Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly
    770                 775                 780

Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala
785                 790                 795                 800

Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr
                805                 810                 815

Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly
            820                 825                 830

Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala
        835                 840                 845

Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn
    850                 855                 860

Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala
865                 870                 875                 880

Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr
                885                 890                 895

Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn
            900                 905                 910

Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr
        915                 920                 925

Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala
    930                 935                 940

Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn
945                 950                 955                 960

Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys
                965                 970                 975
```

```
Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala
            980                 985                 990

Arg Ala Cys Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
        995                 1000                1005

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
    1010                1015                1020

Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1025                1030                1035

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1040                1045                1050

Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1055                1060                1065

Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1070                1075                1080

Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1085                1090                1095

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1100                1105                1110

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
    1115                1120                1125

Gly Ala  Arg Thr Gly Gly Gly  Ala Arg Trp Ser Asn  Ala Ala Tyr
    1130                1135                1140

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Gly Ala Arg  Ala Ala Tyr
    1145                1150                1155

Ala Ala  Tyr Thr Ala Tyr Ala  Ala Arg Ala Cys Asn  Ala Cys Asn
    1160                1165                1170

Cys Cys  Asn Cys Cys Asn Ala  Thr Gly Met Thr Asn  Gly Ala Tyr
    1175                1180                1185

Trp Ser  Asn Gly Ala Tyr Gly  Gly Asn Trp Ser Asn  Thr Thr Tyr
    1190                1195                1200

Thr Thr  Tyr Met Thr Asn Thr  Ala Tyr Trp Ser Asn  Ala Ala Arg
    1205                1210                1215

Met Thr  Asn Ala Cys Asn Gly  Thr Asn Gly Ala Tyr  Ala Ala Arg
    1220                1225                1230
```

```
Trp Ser  Asn Met Gly Asn Thr  Gly Gly Cys Ala Arg  Cys Ala Arg
    1235                 1240                 1245


Gly Gly  Asn Ala Ala Tyr Gly  Thr Asn Thr Thr Tyr  Trp Ser Asn
    1250                 1255                 1260


Thr Gly  Tyr Trp Ser Asn Gly  Thr Asn Ala Thr Gly  Cys Ala Tyr
    1265                 1270                 1275


Gly Ala  Arg Gly Cys Asn Met  Thr Asn Cys Ala Tyr  Ala Ala Tyr
    1280                 1285                 1290


Cys Ala  Tyr Thr Ala Tyr Ala  Cys Asn Cys Ala Arg  Ala Ala Arg
    1295                 1300                 1305


Trp Ser  Asn Met Thr Asn Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1310                 1315                 1320


Cys Cys  Asn Gly Gly Asn Ala  Ala Arg
    1325                 1330


<210>  574
<211>  1332
<212>  PRT
<213>  Homo Sapiens

<400>  574

Cys Ala Arg Ala Thr His Ala Cys Asn Met Thr Asn Ala Ala Arg Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Ala Cys Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Ala Cys Asn Cys Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60


Gly Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80


Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Ala Cys Asn Gly Gly Asn
                85                  90                  95


Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
            100                 105                 110


Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125
```

```
Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Met Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Met Thr Asn Gly Cys Asn Met Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Ala Tyr Gly Ala Tyr Ala Ala
                165                 170                 175

Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Met Thr Asn Ala
        195                 200                 205

Cys Asn Ala Thr His Ala Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Met Thr Asn Ala Cys Asn Ala Thr Gly Ala Cys Asn Ala
                245                 250                 255

Ala Tyr Met Thr Asn Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Ala Cys Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Met Gly Asn Gly
    290                 295                 300

Ala Arg Gly Thr Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn
                325                 330                 335

Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp
            340                 345                 350

Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly
        355                 360                 365

Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn
    370                 375                 380

Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met
385                 390                 395                 400
```

```
Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser
                405                 410                 415

Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn
            420                 425                 430

Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr
        435                 440                 445

Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr
    450                 455                 460

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr
            500                 505                 510

Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg
        515                 520                 525

Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp
    530                 535                 540

Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr
545                 550                 555                 560

Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala
            580                 585                 590

Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr
        595                 600                 605

Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn
    610                 615                 620

Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala
625                 630                 635                 640

Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala
                645                 650                 655

Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr
            660                 665                 670
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```
Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys
        675                 680                 685

Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys
    690                 695                 700

Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr
705                 710                 715                 720

Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly
                725                 730                 735

Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser
            740                 745                 750

Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn
        755                 760                 765

Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly
    770                 775                 780

Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala
785                 790                 795                 800

Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr
                805                 810                 815

Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly
            820                 825                 830

Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala
        835                 840                 845

Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn
    850                 855                 860

Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala
865                 870                 875                 880

Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr
                885                 890                 895

Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn
            900                 905                 910

Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr
        915                 920                 925

Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala
    930                 935                 940
```

```
Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn
945                 950                 955                 960

Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys
                965                 970                 975

Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala
            980                 985                 990

Arg Ala Cys Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
        995                 1000                1005

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
    1010                1015                1020

Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1025                1030                1035

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1040                1045                1050

Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1055                1060                1065

Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1070                1075                1080

Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1085                1090                1095

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1100                1105                1110

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
    1115                1120                1125

Gly Ala  Arg Thr Gly Gly Gly  Ala Arg Trp Ser Asn  Ala Ala Tyr
    1130                1135                1140

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Gly Ala Arg  Ala Ala Tyr
    1145                1150                1155

Ala Ala  Tyr Thr Ala Tyr Ala  Ala Arg Ala Cys Asn  Ala Cys Asn
    1160                1165                1170

Cys Cys  Asn Cys Cys Asn Ala  Thr Gly Met Thr Asn  Gly Ala Tyr
    1175                1180                1185

Trp Ser  Asn Gly Ala Tyr Gly  Gly Asn Trp Ser Asn  Thr Thr Tyr
    1190                1195                1200
```

```
Thr Thr  Tyr Met Thr Asn Thr  Ala Tyr Trp Ser Asn  Ala Ala Arg
    1205                 1210                 1215


Met Thr  Asn Ala Cys Asn Gly  Thr Asn Gly Ala Tyr  Ala Ala Arg
    1220                 1225                 1230


Trp Ser  Asn Met Gly Asn Thr  Gly Gly Cys Ala Arg  Cys Ala Arg
    1235                 1240                 1245


Gly Gly  Asn Ala Ala Tyr Gly  Thr Asn Thr Thr Tyr  Trp Ser Asn
    1250                 1255                 1260


Thr Gly  Tyr Trp Ser Asn Gly  Thr Asn Ala Thr Gly  Cys Ala Tyr
    1265                 1270                 1275


Gly Ala  Arg Gly Cys Asn Met  Thr Asn Cys Ala Tyr  Ala Ala Tyr
    1280                 1285                 1290


Cys Ala  Tyr Thr Ala Tyr Ala  Cys Asn Cys Ala Arg  Ala Ala Arg
    1295                 1300                 1305


Trp Ser  Asn Met Thr Asn Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1310                 1315                 1320


Cys Cys  Asn Gly Gly Asn Ala  Ala Arg
    1325                 1330
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<210> 575
<211> 1332
<212> PRT
<213> Homo Sapiens

<400> 575

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Cys Ala Arg Ala Thr His Ala Cys Asn Met Thr Asn Ala Ala Arg Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Ala Cys Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Ala Cys Asn Cys Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60


Gly Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80


Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Ala Cys Asn Gly Gly Asn
                85                  90                  95
```

```
Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Met Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Met Thr Asn Gly Cys Asn Met Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Thr Asn Gly Ala Arg Ala Ala
                165                 170                 175

Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Met Gly Asn Trp Ser Asn Met Gly Asn Met Thr Asn Ala
        195                 200                 205

Cys Asn Ala Thr His Ala Cys Asn Ala Ala Arg Gly Cys Asn Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Met Thr Asn Ala Cys Asn Ala Thr Gly Ala Cys Asn Ala
                245                 250                 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Ala Cys Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Cys Ala Tyr Ala
    290                 295                 300

Cys Asn Ala Ala Tyr Cys Cys Asn Thr Thr Tyr Gly Ala Arg Thr Ala
305                 310                 315                 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn
                325                 330                 335

Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp
            340                 345                 350

Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly
        355                 360                 365
```

```
Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn
    370                 375                 380

Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met
385                 390                 395                 400

Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser
                405                 410                 415

Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn
            420                 425                 430

Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr
        435                 440                 445

Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr
    450                 455                 460

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr
            500                 505                 510

Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg
        515                 520                 525

Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp
    530                 535                 540

Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr
545                 550                 555                 560

Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala
            580                 585                 590

Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr
        595                 600                 605

Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn
    610                 615                 620

Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala
625                 630                 635                 640
```

```
Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala
                645                 650                 655

Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr
            660                 665                 670

Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys
        675                 680                 685

Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys
    690                 695                 700

Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr
705                 710                 715                 720

Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly
                725                 730                 735

Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser
            740                 745                 750

Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn
        755                 760                 765

Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly
    770                 775                 780

Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala
785                 790                 795                 800

Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr
                805                 810                 815

Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly
            820                 825                 830

Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala
        835                 840                 845

Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn
    850                 855                 860

Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala
865                 870                 875                 880

Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr
                885                 890                 895

Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn
            900                 905                 910
```

```
Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr
        915                 920                 925

Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala
    930                 935                 940

Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn
945                 950                 955                 960

Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys
                965                 970                 975

Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala
            980                 985                 990

Arg Ala Cys Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
        995                 1000                1005

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
    1010                1015                1020

Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1025                1030                1035

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1040                1045                1050

Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1055                1060                1065

Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1070                1075                1080

Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1085                1090                1095

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1100                1105                1110

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
    1115                1120                1125

Gly Ala  Arg Thr Gly Gly Gly  Ala Arg Trp Ser Asn  Ala Ala Tyr
    1130                1135                1140

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Gly Ala Arg  Ala Ala Tyr
    1145                1150                1155

Ala Ala  Tyr Thr Ala Tyr Ala  Ala Arg Ala Cys Asn  Ala Cys Asn
    1160                1165                1170
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Cys Cys  Asn Cys Cys Asn Ala  Thr Gly Met Thr Asn  Gly Ala Tyr
    1175                 1180                 1185


Trp Ser  Asn Gly Ala Tyr Gly  Gly Asn Trp Ser Asn  Thr Thr Tyr
    1190                 1195                 1200


Thr Thr  Tyr Met Thr Asn Thr  Ala Tyr Trp Ser Asn  Ala Ala Arg
    1205                 1210                 1215


Met Thr  Asn Ala Cys Asn Gly  Thr Asn Gly Ala Tyr  Ala Ala Arg
    1220                 1225                 1230


Trp Ser  Asn Met Gly Asn Thr  Gly Gly Cys Ala Arg  Cys Ala Arg
    1235                 1240                 1245


Gly Gly  Asn Ala Ala Tyr Gly  Thr Asn Thr Thr Tyr  Trp Ser Asn
    1250                 1255                 1260


Thr Gly  Tyr Trp Ser Asn Gly  Thr Asn Ala Thr Gly  Cys Ala Tyr
    1265                 1270                 1275


Gly Ala  Arg Gly Cys Asn Met  Thr Asn Cys Ala Tyr  Ala Ala Tyr
    1280                 1285                 1290


Cys Ala  Tyr Thr Ala Tyr Ala  Cys Asn Cys Ala Arg  Ala Ala Arg
    1295                 1300                 1305


Trp Ser  Asn Met Thr Asn Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1310                 1315                 1320


Cys Cys  Asn Gly Gly Asn Ala  Ala Arg
    1325                 1330


<210>  576
<211>  1332
<212>  PRT
<213>  Homo Sapiens

<400>  576

Cys Ala Arg Ala Thr His Ala Cys Asn Met Thr Asn Ala Ala Arg Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Ala Cys Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Ala Cys Asn Cys Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Ala Cys Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60


Gly Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
```

65 70 75 80

Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Ala Cys Asn Gly Gly Asn
85 90 95

Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
100 105 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
115 120 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Met Thr Asn Gly Ala Arg
130 135 140

Thr Gly Gly Met Thr Asn Gly Cys Asn Met Thr Asn Ala Thr His Thr
145 150 155 160

Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Ala Tyr Gly Ala Tyr Ala Ala
165 170 175

Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
180 185 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Met Thr Asn Ala
195 200 205

Cys Asn Ala Thr His Ala Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys
210 215 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn
225 230 235 240

Gly Thr Asn Met Thr Asn Ala Cys Asn Ala Thr Gly Ala Cys Asn Ala
245 250 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
260 265 270

Tyr Ala Cys Asn Gly Cys Asn Ala Cys Asn Thr Ala Tyr Thr Ala Tyr
275 280 285

Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Gly Gly Asn Gly
290 295 300

Ala Arg Met Thr Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
305 310 315 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn
325 330 335

Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp

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            340                 345                 350

Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly
        355                 360                 365

Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn
    370                 375                 380

Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met
385                 390                 395                 400

Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser
                405                 410                 415

Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn
            420                 425                 430

Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr
        435                 440                 445

Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr
    450                 455                 460

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr
            500                 505                 510

Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg
        515                 520                 525

Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp
    530                 535                 540

Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr
545                 550                 555                 560

Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala
            580                 585                 590

Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr
        595                 600                 605

Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn
```

610 615 620

Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala
625 630 635 640

Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala
645 650 655

Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr
660 665 670

Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys
675 680 685

Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys
690 695 700

Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr
705 710 715 720

Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly
725 730 735

Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser
740 745 750

Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn
755 760 765

Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly
770 775 780

Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala
785 790 795 800

Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr
805 810 815

Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly
820 825 830

Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala
835 840 845

Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn
850 855 860

Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala
865 870 875 880

Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr

885 890 895

Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn
900 905 910

Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr
915 920 925

Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala
930 935 940

Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn
945 950 955 960

Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys
965 970 975

Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala
980 985 990

Arg Ala Cys Asn Ala Thr His Trp Ser Asn Ala Ala Arg Ala Cys Asn
995 1000 1005

Ala Ala Arg Gly Gly Asn Cys Ala Arg Cys Cys Asn Met Gly Asn
1010 1015 1020

Gly Ala Arg Cys Cys Asn Cys Ala Arg Gly Thr Asn Thr Ala Tyr
1025 1030 1035

Ala Cys Asn Met Thr Asn Cys Cys Asn Cys Cys Asn Trp Ser Asn
1040 1045 1050

Met Gly Asn Gly Ala Arg Gly Ala Arg Ala Thr Gly Ala Cys Asn
1055 1060 1065

Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn Trp Ser Asn
1070 1075 1080

Met Thr Asn Ala Cys Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn
1085 1090 1095

Ala Ala Arg Gly Gly Asn Thr Thr Tyr Thr Ala Tyr Cys Cys Asn
1100 1105 1110

Trp Ser Asn Gly Ala Tyr Ala Thr His Gly Cys Asn Gly Thr Asn
1115 1120 1125

Gly Ala Arg Thr Gly Gly Gly Ala Arg Trp Ser Asn Ala Ala Tyr
1130 1135 1140

Gly Gly Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Ala Ala Tyr

1145 1150 1155

Ala Ala Tyr Thr Ala Tyr Ala Ala Arg Ala Cys Asn Ala Cys Asn
1160 1165 1170

Cys Cys Asn Cys Cys Asn Ala Thr Gly Met Thr Asn Gly Ala Tyr
1175 1180 1185

Trp Ser Asn Gly Ala Tyr Gly Gly Asn Trp Ser Asn Thr Thr Tyr
1190 1195 1200

Thr Thr Tyr Met Thr Asn Thr Ala Tyr Trp Ser Asn Ala Ala Arg
1205 1210 1215

Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Ala Tyr Ala Ala Arg
1220 1225 1230

Trp Ser Asn Met Gly Asn Thr Gly Gly Cys Ala Arg Cys Ala Arg
1235 1240 1245

Gly Gly Asn Ala Ala Tyr Gly Thr Asn Thr Thr Tyr Trp Ser Asn
1250 1255 1260

Thr Gly Tyr Trp Ser Asn Gly Thr Asn Ala Thr Gly Cys Ala Tyr
1265 1270 1275

Gly Ala Arg Gly Cys Asn Met Thr Asn Cys Ala Tyr Ala Ala Tyr
1280 1285 1290

Cys Ala Tyr Thr Ala Tyr Ala Cys Asn Cys Ala Arg Ala Ala Arg
1295 1300 1305

Trp Ser Asn Met Thr Asn Trp Ser Asn Met Thr Asn Trp Ser Asn
1310 1315 1320

Cys Cys Asn Gly Gly Asn Ala Ala Arg
1325 1330

<210> 577
<211> 1341
<212> PRT
<213> Homo Sapiens

<400> 577

Gly Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Met Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
35 40 45

```
Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Cys Cys Asn Thr Thr Tyr Trp Ser Asn Met Gly Asn Thr Ala Tyr
                85                  90                  95

Trp Ser Asn Ala Thr Gly Ala Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Trp Ser Asn Gly Cys Asn Ala Thr His Trp Ser Asn Trp Ser Asn Trp
145                 150                 155                 160

Ser Asn Trp Ser Asn Trp Ser Asn Thr Ala Tyr Ala Thr His Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Trp Ser Asn Met Thr Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Gly Ala Tyr Met Gly Asn Gly Thr Asn Gly
    290                 295                 300

Gly Asn Gly Cys Asn Ala Cys Asn Cys Cys Asn Gly Ala Tyr Gly Cys
305                 310                 315                 320
```

```
Asn Thr Thr Tyr Gly Ala Tyr Ala Thr His Thr Gly Gly Gly Gly Asn
                325                 330                 335

Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala Thr Gly Gly Thr Asn Ala
            340                 345                 350

Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser
        355                 360                 365

Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn
    370                 375                 380

Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys
385                 390                 395                 400

Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys
                405                 410                 415

Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn
            420                 425                 430

Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly
        435                 440                 445

Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys
    450                 455                 460

Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn
465                 470                 475                 480

Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly
                485                 490                 495

Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr
            500                 505                 510

Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn
        515                 520                 525

Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly
    530                 535                 540

Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser
545                 550                 555                 560

Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn
                565                 570                 575

Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly
            580                 585                 590
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```
Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys
        595                 600                 605

Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr
    610                 615                 620

Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala
625                 630                 635                 640

Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr
                645                 650                 655

Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr
            660                 665                 670

Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr
        675                 680                 685

Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr
    690                 695                 700

Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn
705                 710                 715                 720

Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala
                725                 730                 735

Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr
            740                 745                 750

Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn
        755                 760                 765

Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly
    770                 775                 780

Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser
785                 790                 795                 800

Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg
                805                 810                 815

Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr
            820                 825                 830

Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala
        835                 840                 845

Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg
    850                 855                 860
```

```
Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
865                 870                 875                 880

Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys
                885                 890                 895

Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn
            900                 905                 910

Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys
        915                 920                 925

Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala
    930                 935                 940

Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg
945                 950                 955                 960

Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala
                965                 970                 975

Ala Arg Gly Gly Asn Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys
            980                 985                 990

Asn Ala Thr His Gly Ala Arg Ala  Ala Arg Ala Cys Asn  Ala Thr His
        995                 1000                1005

Trp Ser  Asn Ala Ala Arg Ala  Cys Asn Ala Ala Arg  Gly Gly Asn
    1010                1015                1020

Cys Ala  Arg Cys Cys Asn Met  Gly Asn Gly Ala Arg  Cys Cys Asn
    1025                1030                1035

Cys Ala  Arg Gly Thr Asn Thr  Ala Tyr Ala Cys Asn  Met Thr Asn
    1040                1045                1050

Cys Cys  Asn Cys Cys Asn Trp  Ser Asn Met Gly Asn  Gly Ala Arg
    1055                1060                1065

Gly Ala  Arg Ala Thr Gly Ala  Cys Asn Ala Ala Arg  Ala Ala Tyr
    1070                1075                1080

Cys Ala  Arg Gly Thr Asn Trp  Ser Asn Met Thr Asn  Ala Cys Asn
    1085                1090                1095

Thr Gly  Tyr Met Thr Asn Gly  Thr Asn Ala Ala Arg  Gly Gly Asn
    1100                1105                1110

Thr Thr  Tyr Thr Ala Tyr Cys  Cys Asn Trp Ser Asn  Gly Ala Tyr
    1115                1120                1125
```

```
Ala Thr  His Gly Cys Asn Gly  Thr Asn Gly Ala Arg  Thr Gly Gly
    1130                1135                1140

Gly Ala  Arg Trp Ser Asn Ala  Ala Tyr Gly Gly Asn  Cys Ala Arg
    1145                1150                1155

Cys Cys  Asn Gly Ala Arg Ala  Ala Tyr Ala Ala Tyr  Thr Ala Tyr
    1160                1165                1170

Ala Ala  Arg Ala Cys Asn Ala  Cys Asn Cys Cys Asn  Cys Cys Asn
    1175                1180                1185

Ala Thr  Gly Met Thr Asn Gly  Ala Tyr Trp Ser Asn  Gly Ala Tyr
    1190                1195                1200

Gly Gly  Asn Trp Ser Asn Thr  Thr Tyr Thr Thr Tyr  Met Thr Asn
    1205                1210                1215

Thr Ala  Tyr Trp Ser Asn Ala  Ala Arg Met Thr Asn  Ala Cys Asn
    1220                1225                1230

Gly Thr  Asn Gly Ala Tyr Ala  Ala Arg Trp Ser Asn  Met Gly Asn
    1235                1240                1245

Thr Gly  Gly Cys Ala Arg Cys  Ala Arg Gly Gly Asn  Ala Ala Tyr
    1250                1255                1260

Gly Thr  Asn Thr Thr Tyr Trp  Ser Asn Thr Gly Tyr  Trp Ser Asn
    1265                1270                1275

Gly Thr  Asn Ala Thr Gly Cys  Ala Tyr Gly Ala Arg  Gly Cys Asn
    1280                1285                1290

Met Thr  Asn Cys Ala Tyr Ala  Ala Tyr Cys Ala Tyr  Thr Ala Tyr
    1295                1300                1305

Ala Cys  Asn Cys Ala Arg Ala  Ala Arg Trp Ser Asn  Met Thr Asn
    1310                1315                1320

Trp Ser  Asn Met Thr Asn Trp  Ser Asn Cys Cys Asn  Gly Gly Asn
    1325                1330                1335

Ala Ala  Arg
    1340
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<210> 578
<211> 1362
<212> PRT
<213> Homo Sapiens

<400> 578

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Gly Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Met Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Met Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
        35                  40                  45

Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Gly Cys Asn Ala Thr Gly Ala Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Trp Ser Asn Gly Cys Asn Ala Thr His Trp Ser Asn Gly Gly Asn Trp
145                 150                 155                 160

Ser Asn Gly Gly Asn Gly Gly Asn Trp Ser Asn Ala Cys Asn Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Ala Cys Asn Met Thr Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270
```

```
Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Ala Ala Arg Gly Ala Arg Gly Gly Asn Ala Thr His Gly
    290                 295                 300

Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Ala Cys Asn Gly Cys
305                 310                 315                 320

Asn Gly Ala Arg Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr
                325                 330                 335

Thr Ala Tyr Gly Cys Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr
            340                 345                 350

Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala Cys
        355                 360                 365

Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
    370                 375                 380

Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys
385                 390                 395                 400

Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr
                405                 410                 415

Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn
            420                 425                 430

Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala
        435                 440                 445

Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly
    450                 455                 460

Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr
465                 470                 475                 480

Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala
                485                 490                 495

Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser
            500                 505                 510

Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn
        515                 520                 525

Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys
    530                 535                 540
```

```
Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser
545                 550                 555                 560

Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn
                565                 570                 575

Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala
            580                 585                 590

Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala
        595                 600                 605

Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn
    610                 615                 620

Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly
625                 630                 635                 640

Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala
                645                 650                 655

Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg
            660                 665                 670

Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr
        675                 680                 685

Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys
    690                 695                 700

Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn
705                 710                 715                 720

Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp
                725                 730                 735

Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys
            740                 745                 750

Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr
        755                 760                 765

Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met
    770                 775                 780

Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys
785                 790                 795                 800

Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr
                805                 810                 815
```

```
Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys
            820                 825                 830

Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala
        835                 840                 845

Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn
    850                 855                 860

Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly
865                 870                 875                 880

Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly
                885                 890                 895

Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr
            900                 905                 910

Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly
        915                 920                 925

Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr
    930                 935                 940

Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly
945                 950                 955                 960

Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr
                965                 970                 975

Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser
            980                 985                 990

Asn Ala Ala Tyr Ala Ala Arg Gly  Gly Asn Met Thr Asn  Cys Cys Asn
        995                 1000                1005

Gly Cys  Asn Cys Cys Asn Ala  Thr His Gly Ala Arg  Ala Ala Arg
    1010                1015                1020

Ala Cys  Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
    1025                1030                1035

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
    1040                1045                1050

Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1055                1060                1065

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1070                1075                1080
```

```
Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1085                 1090                 1095

Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1100                 1105                 1110

Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1115                 1120                 1125

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1130                 1135                 1140

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
    1145                 1150                 1155

Gly Ala  Arg Thr Gly Gly Gly  Ala Arg Trp Ser Asn  Ala Ala Tyr
    1160                 1165                 1170

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Gly Ala Arg  Ala Ala Tyr
    1175                 1180                 1185

Ala Ala  Tyr Thr Ala Tyr Ala  Ala Arg Ala Cys Asn  Ala Cys Asn
    1190                 1195                 1200

Cys Cys  Asn Cys Cys Asn Ala  Thr Gly Met Thr Asn  Gly Ala Tyr
    1205                 1210                 1215

Trp Ser  Asn Gly Ala Tyr Gly  Gly Asn Trp Ser Asn  Thr Thr Tyr
    1220                 1225                 1230

Thr Thr  Tyr Met Thr Asn Thr  Ala Tyr Trp Ser Asn  Ala Ala Arg
    1235                 1240                 1245

Met Thr  Asn Ala Cys Asn Gly  Thr Asn Gly Ala Tyr  Ala Ala Arg
    1250                 1255                 1260

Trp Ser  Asn Met Gly Asn Thr  Gly Gly Cys Ala Arg  Cys Ala Arg
    1265                 1270                 1275

Gly Gly  Asn Ala Ala Tyr Gly  Thr Asn Thr Thr Tyr  Trp Ser Asn
    1280                 1285                 1290

Thr Gly  Tyr Trp Ser Asn Gly  Thr Asn Ala Thr Gly  Cys Ala Tyr
    1295                 1300                 1305

Gly Ala  Arg Gly Cys Asn Met  Thr Asn Cys Ala Tyr  Ala Ala Tyr
    1310                 1315                 1320

Cys Ala  Tyr Thr Ala Tyr Ala  Cys Asn Cys Ala Arg  Ala Ala Arg
    1325                 1330                 1335
```

```
Trp Ser  Asn Met Thr Asn Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1340                1345                1350


Cys Cys  Asn Gly Gly Asn Ala  Ala Arg
    1355                1360


<210>  579
<211>  1353
<212>  PRT
<213>  Homo Sapiens

<400>  579

Gly Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Met Thr Asn Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
        35                  40                  45


Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80


Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95


Gly Cys Asn Ala Thr Gly Trp Ser Asn Thr Gly Gly Gly Thr Asn Met
            100                 105                 110


Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125


Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140


Trp Ser Asn Gly Cys Asn Ala Thr His Trp Ser Asn Gly Gly Asn Trp
145                 150                 155                 160


Ser Asn Gly Gly Asn Gly Gly Asn Trp Ser Asn Ala Cys Asn Thr Ala
                165                 170                 175


Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190


Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205
```

```
Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Ala Cys Asn Met Thr Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Ala Ala Arg Gly Ala Arg Gly Gly Asn Ala Thr His Gly
    290                 295                 300

Cys Asn Gly Cys Asn Met Gly Asn Gly Ala Tyr Trp Ser Asn Thr Ala
305                 310                 315                 320

Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Cys Asn Ala Thr Gly
                325                 330                 335

Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
            340                 345                 350

Gly Asn Ala Cys Asn Ala Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr
        355                 360                 365

Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn
    370                 375                 380

Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr
385                 390                 395                 400

Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly
                405                 410                 415

Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn
            420                 425                 430

Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met
        435                 440                 445

Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala
    450                 455                 460

Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg
465                 470                 475                 480
```

```
Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr
                485                 490                 495

Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr
            500                 505                 510

Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr
        515                 520                 525

Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met
    530                 535                 540

Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr
545                 550                 555                 560

Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp
            580                 585                 590

Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys
        595                 600                 605

Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr
    610                 615                 620

Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys
625                 630                 635                 640

Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr
                645                 650                 655

Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg
            660                 665                 670

Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly
        675                 680                 685

Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys
    690                 695                 700

Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn
705                 710                 715                 720

Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met
                725                 730                 735

Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys
            740                 745                 750
```

```
Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly
        755                 760                 765

Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly
    770                 775                 780

Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr
785                 790                 795                 800

Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr
                805                 810                 815

Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys
            820                 825                 830

Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr
        835                 840                 845

Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn
    850                 855                 860

Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala
865                 870                 875                 880

Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala
                885                 890                 895

Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr
            900                 905                 910

Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met
        915                 920                 925

Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala
    930                 935                 940

Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn
945                 950                 955                 960

Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala
                965                 970                 975

Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly
            980                 985                 990

Asn Met Thr Asn Cys Cys Asn Gly  Cys Asn Cys Cys Asn  Ala Thr His
        995                 1000                1005

Gly Ala  Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
    1010                1015                1020
```

```
Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1025                1030                1035

Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1040                1045                1050

Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1055                1060                1065

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1070                1075                1080

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1085                1090                1095

Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1100                1105                1110

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1115                1120                1125

Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1130                1135                1140

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1145                1150                1155

Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1160                1165                1170

Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1175                1180                1185

Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1190                1195                1200

Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1205                1210                1215

Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1220                1225                1230

Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1235                1240                1245

Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1250                1255                1260

Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1265                1270                1275
```

```
Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1280                1285                1290


Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1295                1300                1305


Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1310                1315                1320


Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1325                1330                1335


Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1340                1345                1350


<210>  580
<211>  1353
<212>  PRT
<213>  Homo Sapiens

<400>  580

Gly Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Met Thr Asn Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
        35                  40                  45


Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Ala Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80


Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95


Gly Cys Asn Ala Thr Gly Trp Ser Asn Thr Gly Gly Gly Thr Asn Met
            100                 105                 110


Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125


Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140


Trp Ser Asn Gly Cys Asn Ala Thr His Trp Ser Asn Gly Gly Asn Trp
145                 150                 155                 160


Ser Asn Gly Gly Asn Gly Gly Asn Trp Ser Asn Ala Cys Asn Thr Ala
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165 170 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
180 185 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
195 200 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
210 215 220

Asn Ala Ala Arg Ala Ala Tyr Ala Cys Asn Met Thr Asn Thr Ala Tyr
225 230 235 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
245 250 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
260 265 270

Asn Gly Cys Asn Gly Ala Arg Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
275 280 285

Gly Cys Asn Ala Ala Arg Gly Ala Arg Gly Gly Asn Ala Thr His Gly
290 295 300

Cys Asn Gly Gly Asn Met Gly Asn Gly Ala Tyr Trp Ser Asn Thr Ala
305 310 315 320

Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly
325 330 335

Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
340 345 350

Gly Asn Ala Cys Asn Ala Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr
355 360 365

Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn
370 375 380

Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr
385 390 395 400

Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly
405 410 415

Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn
420 425 430

Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met

```
        435                 440                 445

Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala
    450                 455                 460

Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg
465                 470                 475                 480

Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr
                485                 490                 495

Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr
            500                 505                 510

Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr
        515                 520                 525

Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met
    530                 535                 540

Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr
545                 550                 555                 560

Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp
            580                 585                 590

Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys
        595                 600                 605

Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr
    610                 615                 620

Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys
625                 630                 635                 640

Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr
                645                 650                 655

Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg
            660                 665                 670

Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly
        675                 680                 685

Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys
    690                 695                 700

Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn
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705 710 715 720

Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met
725 730 735

Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys
740 745 750

Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly
755 760 765

Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly
770 775 780

Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr
785 790 795 800

Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr
805 810 815

Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys
820 825 830

Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr
835 840 845

Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn
850 855 860

Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala
865 870 875 880

Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala
885 890 895

Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr
900 905 910

Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met
915 920 925

Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala
930 935 940

Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn
945 950 955 960

Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala
965 970 975

Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly

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          980                 985                 990

Asn Met Thr Asn Cys Cys Asn Gly  Cys Asn Cys Cys Asn  Ala Thr His
       995                 1000                1005

Gly Ala  Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
    1010                1015                1020

Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1025                1030                1035

Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1040                1045                1050

Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1055                1060                1065

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1070                1075                1080

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1085                1090                1095

Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1100                1105                1110

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1115                1120                1125

Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1130                1135                1140

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1145                1150                1155

Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1160                1165                1170

Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1175                1180                1185

Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1190                1195                1200

Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1205                1210                1215

Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1220                1225                1230

Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
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1235 1240 1245

Gly Ala Tyr Ala Ala Arg Trp Ser Asn Met Gly Asn Thr Gly Gly
1250 1255 1260

Cys Ala Arg Cys Ala Arg Gly Gly Asn Ala Ala Tyr Gly Thr Asn
1265 1270 1275

Thr Thr Tyr Trp Ser Asn Thr Gly Tyr Trp Ser Asn Gly Thr Asn
1280 1285 1290

Ala Thr Gly Cys Ala Tyr Gly Ala Arg Gly Cys Asn Met Thr Asn
1295 1300 1305

Cys Ala Tyr Ala Ala Tyr Cys Ala Tyr Thr Ala Tyr Ala Cys Asn
1310 1315 1320

Cys Ala Arg Ala Ala Arg Trp Ser Asn Met Thr Asn Trp Ser Asn
1325 1330 1335

Met Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn Ala Ala Arg
1340 1345 1350

<210> 581
<211> 1347
<212> PRT
<213> Homo Sapiens

<400> 581

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
20 25 30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
35 40 45

Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65 70 75 80

Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
100 105 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
115 120 125

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Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Gly Cys Asn Thr Thr Tyr Ala Thr His Trp Ser Asn Gly Ala Tyr Gly
145                 150                 155                 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Thr Gly Ala Ala Tyr Ala Cys Asn Met Thr Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Trp Ser Asn Thr Ala Tyr Thr Ala Tyr Gly
    290                 295                 300

Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn Thr Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Ala Tyr Gly Gly Asn Thr Thr Tyr Gly Ala Tyr Thr Ala Tyr
                325                 330                 335

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Met
            340                 345                 350

Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser
        355                 360                 365

Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn
    370                 375                 380

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met
385                 390                 395                 400
```

```
Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly
                405                 410                 415

Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn
            420                 425                 430

Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr
        435                 440                 445

Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala
    450                 455                 460

Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn
465                 470                 475                 480

Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser
            500                 505                 510

Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr
        515                 520                 525

Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp
    530                 535                 540

Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser
545                 550                 555                 560

Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn
                565                 570                 575

Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala
            580                 585                 590

Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys
        595                 600                 605

Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn
    610                 615                 620

Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala
625                 630                 635                 640

Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala
                645                 650                 655

Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg
            660                 665                 670
```

```
Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys
        675                 680                 685

Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys
    690                 695                 700

Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn
705                 710                 715                 720

Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys
                725                 730                 735

Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala
            740                 745                 750

Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn
        755                 760                 765

Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala
    770                 775                 780

Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala
785                 790                 795                 800

Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr
                805                 810                 815

Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala
            820                 825                 830

Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly
        835                 840                 845

Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr
    850                 855                 860

Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met
865                 870                 875                 880

Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala
                885                 890                 895

Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn
            900                 905                 910

Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly
        915                 920                 925

Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly
    930                 935                 940
```

```
Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg
945                 950                 955                 960

Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp
                965                 970                 975

Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys Cys
            980                 985                 990

Asn Gly Cys Asn Cys Cys Asn Ala  Thr His Gly Ala Arg  Ala Ala Arg
        995                 1000                1005

Ala Cys  Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
    1010                1015                1020

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
    1025                1030                1035

Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1040                1045                1050

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1055                1060                1065

Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1070                1075                1080

Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1085                1090                1095

Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1100                1105                1110

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1115                1120                1125

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
    1130                1135                1140

Gly Ala  Arg Thr Gly Gly Gly  Ala Arg Trp Ser Asn  Ala Ala Tyr
    1145                1150                1155

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Gly Ala Arg  Ala Ala Tyr
    1160                1165                1170

Ala Ala  Tyr Thr Ala Tyr Ala  Ala Arg Ala Cys Asn  Ala Cys Asn
    1175                1180                1185

Cys Cys  Asn Cys Cys Asn Ala  Thr Gly Met Thr Asn  Gly Ala Tyr
    1190                1195                1200
```

```
Trp Ser  Asn Gly Ala Tyr Gly  Gly Asn Trp Ser Asn  Thr Thr Tyr
    1205                 1210                 1215


Thr Thr  Tyr Met Thr Asn Thr  Ala Tyr Trp Ser Asn  Ala Ala Arg
    1220                 1225                 1230


Met Thr  Asn Ala Cys Asn Gly  Thr Asn Gly Ala Tyr  Ala Ala Arg
    1235                 1240                 1245


Trp Ser  Asn Met Gly Asn Thr  Gly Gly Cys Ala Arg  Cys Ala Arg
    1250                 1255                 1260


Gly Gly  Asn Ala Ala Tyr Gly  Thr Asn Thr Thr Tyr  Trp Ser Asn
    1265                 1270                 1275


Thr Gly  Tyr Trp Ser Asn Gly  Thr Asn Ala Thr Gly  Cys Ala Tyr
    1280                 1285                 1290


Gly Ala  Arg Gly Cys Asn Met  Thr Asn Cys Ala Tyr  Ala Ala Tyr
    1295                 1300                 1305


Cys Ala  Tyr Thr Ala Tyr Ala  Cys Asn Cys Ala Arg  Ala Ala Arg
    1310                 1315                 1320


Trp Ser  Asn Met Thr Asn Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1325                 1330                 1335


Cys Cys  Asn Gly Gly Asn Ala  Ala Arg
    1340                 1345


<210>  582
<211>  1320
<212>  PRT
<213>  Homo Sapiens

<400>  582

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1               5                  10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30


Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45


Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80
```

```
Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly
145                 150                 155                 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Ala Cys Asn Met Thr Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Ala Ala Tyr Gly Thr Asn Ala Thr His Gly
    290                 295                 300

Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly
305                 310                 315                 320

Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn
                325                 330                 335

Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala
            340                 345                 350
```

```
Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr
        355                 360                 365

Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr
    370                 375                 380

Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly
385                 390                 395                 400

Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr
                405                 410                 415

Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg
            420                 425                 430

Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys
        435                 440                 445

Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly
    450                 455                 460

Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn
465                 470                 475                 480

Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala
                485                 490                 495

Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr
            500                 505                 510

Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn
        515                 520                 525

Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly
    530                 535                 540

Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser
545                 550                 555                 560

Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn
                565                 570                 575

Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala
            580                 585                 590

Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys
        595                 600                 605

Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn
    610                 615                 620
```

```
Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met
625                 630                 635                 640

Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala
                645                 650                 655

Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn
            660                 665                 670

Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly
        675                 680                 685

Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr
    690                 695                 700

Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn
705                 710                 715                 720

Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala
                725                 730                 735

Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala
            740                 745                 750

Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn
        755                 760                 765

Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly
    770                 775                 780

Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala
785                 790                 795                 800

Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn
                805                 810                 815

Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys
            820                 825                 830

Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala
        835                 840                 845

Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg
    850                 855                 860

Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met
865                 870                 875                 880

Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr
                885                 890                 895
```

```
Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg
            900                 905                 910

Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala
        915                 920                 925

Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala
    930                 935                 940

Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn
945                 950                 955                 960

Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly
                965                 970                 975

Ala Arg Ala Ala Arg Ala Cys Asn Ala Thr His Trp Ser Asn Ala Ala
            980                 985                 990

Arg Ala Cys Asn Ala Ala Arg Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
        995                 1000                1005

Met Gly  Asn Gly Ala Arg Cys  Cys Asn Cys Ala Arg  Gly Thr Asn
    1010                1015                1020

Thr Ala  Tyr Ala Cys Asn Met  Thr Asn Cys Cys Asn  Cys Cys Asn
    1025                1030                1035

Trp Ser  Asn Met Gly Asn Gly  Ala Arg Gly Ala Arg  Ala Thr Gly
    1040                1045                1050

Ala Cys  Asn Ala Ala Arg Ala  Ala Tyr Cys Ala Arg  Gly Thr Asn
    1055                1060                1065

Trp Ser  Asn Met Thr Asn Ala  Cys Asn Thr Gly Tyr  Met Thr Asn
    1070                1075                1080

Gly Thr  Asn Ala Ala Arg Gly  Gly Asn Thr Thr Tyr  Thr Ala Tyr
    1085                1090                1095

Cys Cys  Asn Trp Ser Asn Gly  Ala Tyr Ala Thr His  Gly Cys Asn
    1100                1105                1110

Gly Thr  Asn Gly Ala Arg Thr  Gly Gly Gly Ala Arg  Trp Ser Asn
    1115                1120                1125

Ala Ala  Tyr Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Gly Ala Arg
    1130                1135                1140

Ala Ala  Tyr Ala Ala Tyr Thr  Ala Tyr Ala Ala Arg  Ala Cys Asn
    1145                1150                1155
```

```
Ala Cys  Asn Cys Cys Asn Cys  Cys Asn Ala Thr Gly  Met Thr Asn
    1160                 1165                 1170


Gly Ala  Tyr Trp Ser Asn Gly  Ala Tyr Gly Gly Asn  Trp Ser Asn
    1175                 1180                 1185


Thr Thr  Tyr Thr Thr Tyr Met  Thr Asn Thr Ala Tyr  Trp Ser Asn
    1190                 1195                 1200


Ala Ala  Arg Met Thr Asn Ala  Cys Asn Gly Thr Asn  Gly Ala Tyr
    1205                 1210                 1215


Ala Ala  Arg Trp Ser Asn Met  Gly Asn Thr Gly Gly  Cys Ala Arg
    1220                 1225                 1230


Cys Ala  Arg Gly Gly Asn Ala  Ala Tyr Gly Thr Asn  Thr Thr Tyr
    1235                 1240                 1245


Trp Ser  Asn Thr Gly Tyr Trp  Ser Asn Gly Thr Asn  Ala Thr Gly
    1250                 1255                 1260


Cys Ala  Tyr Gly Ala Arg Gly  Cys Asn Met Thr Asn  Cys Ala Tyr
    1265                 1270                 1275


Ala Ala  Tyr Cys Ala Tyr Thr  Ala Tyr Ala Cys Asn  Cys Ala Arg
    1280                 1285                 1290


Ala Ala  Arg Trp Ser Asn Met  Thr Asn Trp Ser Asn  Met Thr Asn
    1295                 1300                 1305


Trp Ser  Asn Cys Cys Asn Gly  Gly Asn Ala Ala Arg
    1310                 1315                 1320


<210>  583
<211>  1338
<212>  PRT
<213>  Homo Sapiens

<400>  583

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30


Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45


Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60
```

```
Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Gly Ala Tyr Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly
145                 150                 155                 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Thr His Ala Ala Arg Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Ala Cys Asn Met Thr Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Gly Gly Asn Gly Gly Asn Gly Cys Asn Ala
    290                 295                 300

Cys Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Thr Ala Tyr Thr Thr
305                 310                 315                 320

Tyr Cys Ala Arg Cys Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg
                325                 330                 335
```

```
Gly Gly Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn Gly
            340                 345                 350

Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys
        355                 360                 365

Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn
    370                 375                 380

Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr
385                 390                 395                 400

Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser
                405                 410                 415

Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn
            420                 425                 430

Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala
        435                 440                 445

Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala
    450                 455                 460

Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn
465                 470                 475                 480

Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met
                485                 490                 495

Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala
            500                 505                 510

Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn
        515                 520                 525

Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met
    530                 535                 540

Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser
545                 550                 555                 560

Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn
                565                 570                 575

Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala
            580                 585                 590

Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly
        595                 600                 605
```

```
Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg
    610                 615                 620

Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly
625                 630                 635                 640

Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala
                645                 650                 655

Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn
            660                 665                 670

Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys
        675                 680                 685

Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys
    690                 695                 700

Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr
705                 710                 715                 720

Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys
                725                 730                 735

Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr
            740                 745                 750

Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn
        755                 760                 765

Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly
    770                 775                 780

Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala
785                 790                 795                 800

Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn
                805                 810                 815

Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly
            820                 825                 830

Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr
        835                 840                 845

Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn
    850                 855                 860

Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys
865                 870                 875                 880
```

```
Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr
                885                 890                 895

Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn
            900                 905                 910

Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys
        915                 920                 925

Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly
    930                 935                 940

Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr
945                 950                 955                 960

Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly
                965                 970                 975

Gly Asn Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr
            980                 985                 990

His Gly Ala Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
        995                 1000                1005

Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1010                1015                1020

Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1025                1030                1035

Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1040                1045                1050

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1055                1060                1065

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1070                1075                1080

Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1085                1090                1095

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1100                1105                1110

Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1115                1120                1125

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1130                1135                1140
```

```
Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1145                 1150                 1155


Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1160                 1165                 1170


Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1175                 1180                 1185


Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1190                 1195                 1200


Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1205                 1210                 1215


Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1220                 1225                 1230


Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1235                 1240                 1245


Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1250                 1255                 1260


Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1265                 1270                 1275


Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1280                 1285                 1290


Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1295                 1300                 1305


Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1310                 1315                 1320


Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1325                 1330                 1335


<210>  584
<211>  1332
<212>  PRT
<213>  Homo Sapiens

<400>  584

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1               5                  10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30


Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
```

```
        35                  40                  45

Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly
145                 150                 155                 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Ala Cys Asn Met Thr Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Thr Asn Met Thr Asn Met Thr Asn Thr Gly Gly Thr Thr Tyr Gly
    290                 295                 300

Gly Asn Gly Ala Arg Ala Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
```

305 310 315 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Trp Ser Asn
325 330 335

Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Cys
340 345 350

Cys Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly
355 360 365

Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn
370 375 380

Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met
385 390 395 400

Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser
405 410 415

Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn
420 425 430

Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr
435 440 445

Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr
450 455 460

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr
465 470 475 480

Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp
485 490 495

Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr
500 505 510

Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg
515 520 525

Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp
530 535 540

Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr
545 550 555 560

Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn
565 570 575

Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala

580 585 590

Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr
595 600 605

Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn
610 615 620

Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala
625 630 635 640

Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala
645 650 655

Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr
660 665 670

Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys
675 680 685

Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys
690 695 700

Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr
705 710 715 720

Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly
725 730 735

Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser
740 745 750

Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn
755 760 765

Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly
770 775 780

Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala
785 790 795 800

Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr
805 810 815

Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly
820 825 830

Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala
835 840 845

Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn

```
    850                 855                 860

Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala
865                 870                 875                 880

Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr
                885                 890                 895

Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn
            900                 905                 910

Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr
        915                 920                 925

Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala
    930                 935                 940

Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn
945                 950                 955                 960

Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys
                965                 970                 975

Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala
            980                 985                 990

Arg Ala Cys Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
        995                 1000                1005

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
    1010                1015                1020

Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1025                1030                1035

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1040                1045                1050

Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1055                1060                1065

Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1070                1075                1080

Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1085                1090                1095

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1100                1105                1110

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
```

1115 1120 1125

Gly Ala Arg Thr Gly Gly Gly Ala Arg Trp Ser Asn Ala Ala Tyr
1130 1135 1140

Gly Gly Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Ala Ala Tyr
1145 1150 1155

Ala Ala Tyr Thr Ala Tyr Ala Ala Arg Ala Cys Asn Ala Cys Asn
1160 1165 1170

Cys Cys Asn Cys Cys Asn Ala Thr Gly Met Thr Asn Gly Ala Tyr
1175 1180 1185

Trp Ser Asn Gly Ala Tyr Gly Gly Asn Trp Ser Asn Thr Thr Tyr
1190 1195 1200

Thr Thr Tyr Met Thr Asn Thr Ala Tyr Trp Ser Asn Ala Ala Arg
1205 1210 1215

Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Ala Tyr Ala Ala Arg
1220 1225 1230

Trp Ser Asn Met Gly Asn Thr Gly Gly Cys Ala Arg Cys Ala Arg
1235 1240 1245

Gly Gly Asn Ala Ala Tyr Gly Thr Asn Thr Thr Tyr Trp Ser Asn
1250 1255 1260

Thr Gly Tyr Trp Ser Asn Gly Thr Asn Ala Thr Gly Cys Ala Tyr
1265 1270 1275

Gly Ala Arg Gly Cys Asn Met Thr Asn Cys Ala Tyr Ala Ala Tyr
1280 1285 1290

Cys Ala Tyr Thr Ala Tyr Ala Cys Asn Cys Ala Arg Ala Ala Arg
1295 1300 1305

Trp Ser Asn Met Thr Asn Trp Ser Asn Met Thr Asn Trp Ser Asn
1310 1315 1320

Cys Cys Asn Gly Gly Asn Ala Ala Arg
1325 1330

<210> 585
<211> 1323
<212> PRT
<213> Homo Sapiens

<400> 585

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1 5 10 15

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Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45

Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Trp Ser Asn Gly
145                 150                 155                 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Ala Cys Asn Met Thr Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285
```

```
Gly Cys Asn Met Gly Asn Ala Ala Tyr Met Thr Asn Cys Cys Asn Thr
    290                 295                 300

Thr Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala
305                 310                 315                 320

Arg Gly Gly Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn
                325                 330                 335

Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala
            340                 345                 350

Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr
        355                 360                 365

Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn
    370                 375                 380

Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp
385                 390                 395                 400

Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys
                405                 410                 415

Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn
            420                 425                 430

Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly
        435                 440                 445

Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser
    450                 455                 460

Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn
465                 470                 475                 480

Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys
                485                 490                 495

Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr
            500                 505                 510

Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn
        515                 520                 525

Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp
    530                 535                 540

Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys
545                 550                 555                 560
```

```
Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn
                565                 570                 575

Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr
            580                 585                 590

Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala
        595                 600                 605

Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg
    610                 615                 620

Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly
625                 630                 635                 640

Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr
                645                 650                 655

Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr
            660                 665                 670

Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly
        675                 680                 685

Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr
    690                 695                 700

Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg
705                 710                 715                 720

Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala
                725                 730                 735

Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys
            740                 745                 750

Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn
        755                 760                 765

Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys
    770                 775                 780

Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr
785                 790                 795                 800

Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr
                805                 810                 815

Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly
            820                 825                 830
```

```
Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys
        835                 840                 845

Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg
    850                 855                 860

Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr
865                 870                 875                 880

Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr
                885                 890                 895

Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr
            900                 905                 910

Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly
        915                 920                 925

Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly
    930                 935                 940

Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg
945                 950                 955                 960

Gly Gly Asn Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala
                965                 970                 975

Thr His Gly Ala Arg Ala Ala Arg Ala Cys Asn Ala Thr His Trp Ser
            980                 985                 990

Asn Ala Ala Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
        995                 1000                1005

Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1010                1015                1020

Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1025                1030                1035

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1040                1045                1050

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1055                1060                1065

Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1070                1075                1080

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1085                1090                1095
```

```
Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1100                1105                1110

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1115                1120                1125

Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1130                1135                1140

Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1145                1150                1155

Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1160                1165                1170

Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1175                1180                1185

Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1190                1195                1200

Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1205                1210                1215

Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1220                1225                1230

Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1235                1240                1245

Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1250                1255                1260

Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1265                1270                1275

Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1280                1285                1290

Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1295                1300                1305

Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1310                1315                1320
```

<210> 586
<211> 1347
<212> PRT
<213> Homo Sapiens

<400> 586

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Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45

Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Gly Ala Tyr Gly
145                 150                 155                 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Cys Ala Arg Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Ala Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Gly
        195                 200                 205

Thr Asn Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Ala Cys Asn Met Thr Asn Thr Thr Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270
```

```
Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Trp Ser Asn Cys Ala Tyr Thr Ala Tyr Gly
    290                 295                 300

Gly Asn Gly Gly Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
                325                 330                 335

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala
            340                 345                 350

Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser
        355                 360                 365

Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn
    370                 375                 380

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met
385                 390                 395                 400

Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly
                405                 410                 415

Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn
            420                 425                 430

Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr
        435                 440                 445

Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala
    450                 455                 460

Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn
465                 470                 475                 480

Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser
            500                 505                 510

Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr
        515                 520                 525

Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp
    530                 535                 540
```

```
Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser
545                 550                 555                 560

Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn
                565                 570                 575

Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala
            580                 585                 590

Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys
        595                 600                 605

Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn
    610                 615                 620

Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala
625                 630                 635                 640

Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala
                645                 650                 655

Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg
            660                 665                 670

Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys
        675                 680                 685

Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys
    690                 695                 700

Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn
705                 710                 715                 720

Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys
                725                 730                 735

Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala
            740                 745                 750

Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn
        755                 760                 765

Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala
    770                 775                 780

Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala
785                 790                 795                 800

Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr
                805                 810                 815
```

```
Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala
            820                 825                 830

Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly
        835                 840                 845

Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr
    850                 855                 860

Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met
865                 870                 875                 880

Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala
                885                 890                 895

Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn
            900                 905                 910

Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly
        915                 920                 925

Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly
    930                 935                 940

Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg
945                 950                 955                 960

Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp
                965                 970                 975

Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys Cys
            980                 985                 990

Asn Gly Cys Asn Cys Cys Asn Ala  Thr His Gly Ala Arg  Ala Ala Arg
        995                 1000                1005

Ala Cys  Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
    1010                1015                1020

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
    1025                1030                1035

Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1040                1045                1050

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1055                1060                1065

Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1070                1075                1080
```

```
Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1085                 1090                 1095

Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1100                 1105                 1110

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1115                 1120                 1125

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
    1130                 1135                 1140

Gly Ala  Arg Thr Gly Gly Gly  Ala Arg Trp Ser Asn  Ala Ala Tyr
    1145                 1150                 1155

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Gly Ala Arg  Ala Ala Tyr
    1160                 1165                 1170

Ala Ala  Tyr Thr Ala Tyr Ala  Ala Arg Ala Cys Asn  Ala Cys Asn
    1175                 1180                 1185

Cys Cys  Asn Cys Cys Asn Ala  Thr Gly Met Thr Asn  Gly Ala Tyr
    1190                 1195                 1200

Trp Ser  Asn Gly Ala Tyr Gly  Gly Asn Trp Ser Asn  Thr Thr Tyr
    1205                 1210                 1215

Thr Thr  Tyr Met Thr Asn Thr  Ala Tyr Trp Ser Asn  Ala Ala Arg
    1220                 1225                 1230

Met Thr  Asn Ala Cys Asn Gly  Thr Asn Gly Ala Tyr  Ala Ala Arg
    1235                 1240                 1245

Trp Ser  Asn Met Gly Asn Thr  Gly Gly Cys Ala Arg  Cys Ala Arg
    1250                 1255                 1260

Gly Gly  Asn Ala Ala Tyr Gly  Thr Asn Thr Thr Tyr  Trp Ser Asn
    1265                 1270                 1275

Thr Gly  Tyr Trp Ser Asn Gly  Thr Asn Ala Thr Gly  Cys Ala Tyr
    1280                 1285                 1290

Gly Ala  Arg Gly Cys Asn Met  Thr Asn Cys Ala Tyr  Ala Ala Tyr
    1295                 1300                 1305

Cys Ala  Tyr Thr Ala Tyr Ala  Cys Asn Cys Ala Arg  Ala Ala Arg
    1310                 1315                 1320

Trp Ser  Asn Met Thr Asn Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1325                 1330                 1335
```

```
Cys Cys  Asn Gly Gly Asn Ala  Ala Arg
    1340                1345


<210>  587
<211>  1338
<212>  PRT
<213>  Homo Sapiens

<400>  587

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30


Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45


Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80


Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95


Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110


Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125


Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140


Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly
145                 150                 155                 160


Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Met Gly
                165                 170                 175


Asn Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190


Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205


Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220
```

```
Asn Ala Ala Arg Ala Ala Tyr Ala Cys Asn Met Thr Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Gly Ala Tyr Gly Gly Asn Thr Gly Gly Cys
    290                 295                 300

Ala Arg Cys Ala Arg Cys Ala Arg Gly Cys Asn Cys Cys Asn Thr Thr
305                 310                 315                 320

Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg
                325                 330                 335

Gly Gly Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn Gly
            340                 345                 350

Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys
        355                 360                 365

Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn
    370                 375                 380

Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr
385                 390                 395                 400

Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser
                405                 410                 415

Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn
            420                 425                 430

Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala
        435                 440                 445

Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala
    450                 455                 460

Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn
465                 470                 475                 480

Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met
                485                 490                 495
```

```
Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala
            500                 505                 510

Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn
        515                 520                 525

Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met
    530                 535                 540

Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser
545                 550                 555                 560

Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn
                565                 570                 575

Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala
            580                 585                 590

Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly
        595                 600                 605

Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg
    610                 615                 620

Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly
625                 630                 635                 640

Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala
                645                 650                 655

Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn
            660                 665                 670

Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys
        675                 680                 685

Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys
    690                 695                 700

Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr
705                 710                 715                 720

Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys
                725                 730                 735

Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr
            740                 745                 750

Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn
        755                 760                 765
```

```
Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly
    770                 775                 780

Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala
785                 790                 795                 800

Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn
                805                 810                 815

Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly
            820                 825                 830

Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr
        835                 840                 845

Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn
    850                 855                 860

Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys
865                 870                 875                 880

Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr
                885                 890                 895

Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn
            900                 905                 910

Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys
        915                 920                 925

Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly
    930                 935                 940

Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr
945                 950                 955                 960

Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly
                965                 970                 975

Gly Asn Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr
            980                 985                 990

His Gly Ala Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
        995                 1000                1005

Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1010                1015                1020

Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1025                1030                1035
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Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1040                1045                1050

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1055                1060                1065

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1070                1075                1080

Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1085                1090                1095

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1100                1105                1110

Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1115                1120                1125

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1130                1135                1140

Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1145                1150                1155

Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1160                1165                1170

Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1175                1180                1185

Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1190                1195                1200

Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1205                1210                1215

Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1220                1225                1230

Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1235                1240                1245

Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1250                1255                1260

Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1265                1270                1275

Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1280                1285                1290
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Cys Ala Tyr Ala Ala Tyr Cys Ala Tyr Thr Ala Tyr Ala Cys Asn
1295 1300 1305

Cys Ala Arg Ala Ala Arg Trp Ser Asn Met Thr Asn Trp Ser Asn
1310 1315 1320

Met Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn Ala Ala Arg
1325 1330 1335

<210> 588
<211> 1332
<212> PRT
<213> Homo Sapiens

<400> 588

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
20 25 30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
35 40 45

Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65 70 75 80

Tyr Ala Cys Asn Thr Thr Tyr Met Gly Asn Trp Ser Asn Cys Ala Tyr
85 90 95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
100 105 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
115 120 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
130 135 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly
145 150 155 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Ala Ala
165 170 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
180 185 190

Met Gly Asn Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala

195 200 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
210 215 220

Asn Ala Ala Arg Ala Ala Tyr Ala Cys Asn Met Thr Asn Gly Ala Tyr
225 230 235 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
245 250 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Ala Cys
260 265 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
275 280 285

Gly Cys Asn Met Gly Asn Thr Gly Gly Gly Gly Asn Ala Thr His Trp
290 295 300

Ser Asn Gly Cys Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Gly
305 310 315 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn
325 330 335

Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp
340 345 350

Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly
355 360 365

Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn
370 375 380

Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met
385 390 395 400

Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser
405 410 415

Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn
420 425 430

Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr
435 440 445

Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr
450 455 460

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr

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465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr
            500                 505                 510

Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg
        515                 520                 525

Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp
    530                 535                 540

Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr
545                 550                 555                 560

Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala
            580                 585                 590

Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr
        595                 600                 605

Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn
    610                 615                 620

Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala
625                 630                 635                 640

Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala
                645                 650                 655

Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr
            660                 665                 670

Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys
        675                 680                 685

Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys
    690                 695                 700

Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr
705                 710                 715                 720

Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly
                725                 730                 735

Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser
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            740                 745                 750

Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn
        755                 760                 765

Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly
    770                 775                 780

Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala
785                 790                 795                 800

Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr
                805                 810                 815

Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly
            820                 825                 830

Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala
        835                 840                 845

Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn
    850                 855                 860

Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala
865                 870                 875                 880

Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr
                885                 890                 895

Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn
            900                 905                 910

Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr
        915                 920                 925

Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala
    930                 935                 940

Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn
945                 950                 955                 960

Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys
                965                 970                 975

Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala
            980                 985                 990

Arg Ala Cys Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
        995                 1000                1005

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
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    1010                1015                1020

Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1025                1030                1035

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1040                1045                1050

Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1055                1060                1065

Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1070                1075                1080

Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1085                1090                1095

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1100                1105                1110

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
    1115                1120                1125

Gly Ala  Arg Thr Gly Gly Gly  Ala Arg Trp Ser Asn  Ala Ala Tyr
    1130                1135                1140

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Gly Ala Arg  Ala Ala Tyr
    1145                1150                1155

Ala Ala  Tyr Thr Ala Tyr Ala  Ala Arg Ala Cys Asn  Ala Cys Asn
    1160                1165                1170

Cys Cys  Asn Cys Cys Asn Ala  Thr Gly Met Thr Asn  Gly Ala Tyr
    1175                1180                1185

Trp Ser  Asn Gly Ala Tyr Gly  Gly Asn Trp Ser Asn  Thr Thr Tyr
    1190                1195                1200

Thr Thr  Tyr Met Thr Asn Thr  Ala Tyr Trp Ser Asn  Ala Ala Arg
    1205                1210                1215

Met Thr  Asn Ala Cys Asn Gly  Thr Asn Gly Ala Tyr  Ala Ala Arg
    1220                1225                1230

Trp Ser  Asn Met Gly Asn Thr  Gly Gly Cys Ala Arg  Cys Ala Arg
    1235                1240                1245

Gly Gly  Asn Ala Ala Tyr Gly  Thr Asn Thr Thr Tyr  Trp Ser Asn
    1250                1255                1260

Thr Gly  Tyr Trp Ser Asn Gly  Thr Asn Ala Thr Gly  Cys Ala Tyr
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1265 1270 1275

Gly Ala Arg Gly Cys Asn Met Thr Asn Cys Ala Tyr Ala Ala Tyr
1280 1285 1290

Cys Ala Tyr Thr Ala Tyr Ala Cys Asn Cys Ala Arg Ala Ala Arg
1295 1300 1305

Trp Ser Asn Met Thr Asn Trp Ser Asn Met Thr Asn Trp Ser Asn
1310 1315 1320

Cys Cys Asn Gly Gly Asn Ala Ala Arg
1325 1330

<210> 589
<211> 1323
<212> PRT
<213> Homo Sapiens

<400> 589

Gly Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Met Thr
20 25 30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
35 40 45

Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65 70 75 80

Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Gly Cys Asn Thr Ala Tyr
85 90 95

Trp Ser Asn Ala Thr Gly Ala Ala Tyr Thr Gly Gly Gly Thr Asn Met
100 105 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
115 120 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
130 135 140

Trp Ser Asn Thr Ala Tyr Ala Thr His Trp Ser Asn Trp Ser Asn Trp
145 150 155 160

Ser Asn Gly Gly Asn Met Gly Asn Ala Cys Asn Ala Thr His Thr Ala
165 170 175

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Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Trp Ser Asn Met Thr Asn Thr Thr Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Ala Tyr Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Thr Asn Thr Gly Gly Gly Cys Asn Cys Cys Asn Thr
    290                 295                 300

Thr Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala
305                 310                 315                 320

Arg Gly Gly Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn
                325                 330                 335

Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala
            340                 345                 350

Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr
        355                 360                 365

Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn
    370                 375                 380

Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp
385                 390                 395                 400

Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys
                405                 410                 415

Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn
            420                 425                 430

Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly
        435                 440                 445
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Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser
    450                 455                 460

Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn
465                 470                 475                 480

Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys
                485                 490                 495

Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr
            500                 505                 510

Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn
        515                 520                 525

Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp
    530                 535                 540

Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys
545                 550                 555                 560

Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn
                565                 570                 575

Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr
            580                 585                 590

Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala
        595                 600                 605

Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg
    610                 615                 620

Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly
625                 630                 635                 640

Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr
                645                 650                 655

Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr
            660                 665                 670

Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly
        675                 680                 685

Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr
    690                 695                 700

Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg
705                 710                 715                 720
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Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala
                725                 730                 735

Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys
            740                 745                 750

Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn
        755                 760                 765

Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys
    770                 775                 780

Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr
785                 790                 795                 800

Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr
                805                 810                 815

Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly
            820                 825                 830

Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys
        835                 840                 845

Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg
    850                 855                 860

Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr
865                 870                 875                 880

Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr
                885                 890                 895

Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr
            900                 905                 910

Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly
        915                 920                 925

Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly
    930                 935                 940

Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg
945                 950                 955                 960

Gly Gly Asn Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala
                965                 970                 975

Thr His Gly Ala Arg Ala Ala Arg Ala Cys Asn Ala Thr His Trp Ser
            980                 985                 990
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Asn Ala Ala Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
        995                 1000                1005


Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1010                1015                1020


Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1025                1030                1035


Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1040                1045                1050


Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1055                1060                1065


Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1070                1075                1080


Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1085                1090                1095


Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1100                1105                1110


Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1115                1120                1125


Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1130                1135                1140


Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1145                1150                1155


Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1160                1165                1170


Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1175                1180                1185


Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1190                1195                1200


Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1205                1210                1215


Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1220                1225                1230


Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1235                1240                1245
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```
Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1250                1255                1260


Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1265                1270                1275


Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1280                1285                1290


Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1295                1300                1305


Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1310                1315                1320


<210>  590
<211>  1353
<212>  PRT
<213>  Homo Sapiens

<400>  590

Gly Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
        35                  40                  45


Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80


Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95


Trp Ser Asn Ala Thr Gly Ala Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110


Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125


Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140


Trp Ser Asn Cys Ala Tyr Ala Thr His Trp Ser Asn Trp Ser Asn Trp
145                 150                 155                 160
```

```
Ser Asn Trp Ser Asn Met Gly Asn Ala Cys Asn Ala Thr His Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Trp Ser Asn Gly Thr Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Ala Tyr Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Gly Ala Tyr Gly Gly Asn Thr Ala Tyr Ala
    290                 295                 300

Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Gly Asn Gly Gly Asn Gly Gly
305                 310                 315                 320

Asn Ala Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly
                325                 330                 335

Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
            340                 345                 350

Gly Asn Ala Cys Asn Ala Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr
        355                 360                 365

Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn
    370                 375                 380

Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr
385                 390                 395                 400

Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly
                405                 410                 415

Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn
            420                 425                 430
```

```
Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met
        435                 440                 445

Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala
    450                 455                 460

Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg
465                 470                 475                 480

Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr
                485                 490                 495

Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr
            500                 505                 510

Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr
        515                 520                 525

Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met
    530                 535                 540

Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr
545                 550                 555                 560

Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp
            580                 585                 590

Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys
        595                 600                 605

Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr
    610                 615                 620

Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys
625                 630                 635                 640

Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr
                645                 650                 655

Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg
            660                 665                 670

Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly
        675                 680                 685

Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys
    690                 695                 700
```

```
Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn
705                 710                 715                 720

Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met
                725                 730                 735

Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys
            740                 745                 750

Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly
        755                 760                 765

Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly
    770                 775                 780

Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr
785                 790                 795                 800

Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr
                805                 810                 815

Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys
            820                 825                 830

Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr
        835                 840                 845

Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn
    850                 855                 860

Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala
865                 870                 875                 880

Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala
                885                 890                 895

Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr
            900                 905                 910

Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met
        915                 920                 925

Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala
    930                 935                 940

Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn
945                 950                 955                 960

Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala
                965                 970                 975
```

```
Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly
            980                 985                 990

Asn Met Thr Asn Cys Cys Asn Gly  Cys Asn Cys Cys Asn  Ala Thr His
        995                 1000                1005

Gly Ala  Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
    1010                1015                1020

Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1025                1030                1035

Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1040                1045                1050

Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1055                1060                1065

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1070                1075                1080

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1085                1090                1095

Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1100                1105                1110

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1115                1120                1125

Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1130                1135                1140

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1145                1150                1155

Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1160                1165                1170

Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1175                1180                1185

Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1190                1195                1200

Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1205                1210                1215

Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1220                1225                1230
```

```
Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1235                 1240                 1245


Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1250                 1255                 1260


Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1265                 1270                 1275


Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1280                 1285                 1290


Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1295                 1300                 1305


Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1310                 1315                 1320


Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1325                 1330                 1335


Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1340                 1345                 1350
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<210> 591
<211> 1353
<212> PRT
<213> Homo Sapiens

<400> 591

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Gly Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Gly
1               5                  10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
        35                  40                  45


Trp Ser Asn Met Thr Asn Met Gly Asn Met Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80


Tyr Ala Cys Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95


Trp Ser Asn Ala Thr Gly Ala Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110
```

```
Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Trp Ser Asn Cys Ala Tyr Ala Thr His Trp Ser Asn Met Gly Asn Trp
145                 150                 155                 160

Ser Asn Trp Ser Asn Met Gly Asn Ala Cys Asn Ala Thr His Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Trp Ser Asn Met Thr Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Met
                245                 250                 255

Thr Asn Met Gly Asn Gly Ala Tyr Gly Ala Arg Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Gly Ala Tyr Gly Gly Asn Thr Ala Tyr Ala
    290                 295                 300

Ala Tyr Thr Gly Gly Ala Ala Tyr Ala Ala Tyr Gly Gly Asn Gly Gly
305                 310                 315                 320

Asn Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly
                325                 330                 335

Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
            340                 345                 350

Gly Asn Ala Cys Asn Ala Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr
        355                 360                 365

Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn
    370                 375                 380
```

```
Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr
385                 390                 395                 400

Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly
                405                 410                 415

Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn
            420                 425                 430

Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met
        435                 440                 445

Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala
    450                 455                 460

Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg
465                 470                 475                 480

Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr
                485                 490                 495

Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr
            500                 505                 510

Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr
        515                 520                 525

Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met
    530                 535                 540

Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr
545                 550                 555                 560

Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp
            580                 585                 590

Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys
        595                 600                 605

Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr
    610                 615                 620

Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys
625                 630                 635                 640

Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr
                645                 650                 655
```

```
Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg
            660                 665                 670

Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly
        675                 680                 685

Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys
    690                 695                 700

Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn
705                 710                 715                 720

Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met
                725                 730                 735

Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys
            740                 745                 750

Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly
        755                 760                 765

Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly
    770                 775                 780

Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr
785                 790                 795                 800

Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr
                805                 810                 815

Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys
            820                 825                 830

Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr
        835                 840                 845

Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn
    850                 855                 860

Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala
865                 870                 875                 880

Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala
                885                 890                 895

Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr
            900                 905                 910

Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met
        915                 920                 925
```

```
Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala
    930                 935                 940

Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn
945                 950                 955                 960

Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala
                965                 970                 975

Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly
            980                 985                 990

Asn Met Thr Asn Cys Cys Asn Gly  Cys Asn Cys Cys Asn  Ala Thr His
        995                 1000                1005

Gly Ala  Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
    1010                1015                1020

Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1025                1030                1035

Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1040                1045                1050

Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1055                1060                1065

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1070                1075                1080

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1085                1090                1095

Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1100                1105                1110

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1115                1120                1125

Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1130                1135                1140

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1145                1150                1155

Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1160                1165                1170

Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1175                1180                1185
```

```
Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1190                 1195                 1200


Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1205                 1210                 1215


Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1220                 1225                 1230


Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1235                 1240                 1245


Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1250                 1255                 1260


Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1265                 1270                 1275


Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1280                 1285                 1290


Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1295                 1300                 1305


Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1310                 1315                 1320


Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1325                 1330                 1335


Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1340                 1345                 1350


<210>  592
<211>  1332
<212>  PRT
<213>  Homo Sapiens

<400>  592

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1               5                  10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60


Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
```

65 70 75 80

Asn Trp Ser Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Gly Asn
85 90 95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
100 105 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
115 120 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Met Thr Asn Gly Ala Arg
130 135 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
145 150 155 160

Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Ala Cys
165 170 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
180 185 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Ala
195 200 205

Cys Asn Ala Thr His Trp Ser Asn Gly Thr Asn Gly Ala Tyr Ala Cys
210 215 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225 230 235 240

Trp Ser Asn Met Thr Asn Ala Ala Tyr Met Thr Asn Trp Ser Asn Trp
245 250 255

Ser Asn Gly Thr Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala
260 265 270

Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
275 280 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Gly Asn Cys Cys Asn Thr
290 295 300

Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr
305 310 315 320

Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn
325 330 335

Ala Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp

```
            340                 345                 350

Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly
        355                 360                 365

Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn
    370                 375                 380

Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met
385                 390                 395                 400

Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser
                405                 410                 415

Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn
            420                 425                 430

Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr
        435                 440                 445

Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr
    450                 455                 460

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr
465                 470                 475                 480

Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr
            500                 505                 510

Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg
        515                 520                 525

Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp
    530                 535                 540

Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr
545                 550                 555                 560

Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala
            580                 585                 590

Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr
        595                 600                 605

Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn
```

610 615 620

Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala
625 630 635 640

Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala
645 650 655

Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr
660 665 670

Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys
675 680 685

Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys
690 695 700

Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr
705 710 715 720

Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly
725 730 735

Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser
740 745 750

Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn
755 760 765

Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly
770 775 780

Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala
785 790 795 800

Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr
805 810 815

Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly
820 825 830

Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala
835 840 845

Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn
850 855 860

Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala
865 870 875 880

Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr

885 890 895

Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn
900 905 910

Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr
915 920 925

Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala
930 935 940

Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn
945 950 955 960

Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys
965 970 975

Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala
980 985 990

Arg Ala Cys Asn Ala Thr His Trp Ser Asn Ala Ala Arg Ala Cys Asn
995 1000 1005

Ala Ala Arg Gly Gly Asn Cys Ala Arg Cys Cys Asn Met Gly Asn
1010 1015 1020

Gly Ala Arg Cys Cys Asn Cys Ala Arg Gly Thr Asn Thr Ala Tyr
1025 1030 1035

Ala Cys Asn Met Thr Asn Cys Cys Asn Cys Cys Asn Trp Ser Asn
1040 1045 1050

Met Gly Asn Gly Ala Arg Gly Ala Arg Ala Thr Gly Ala Cys Asn
1055 1060 1065

Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn Trp Ser Asn
1070 1075 1080

Met Thr Asn Ala Cys Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn
1085 1090 1095

Ala Ala Arg Gly Gly Asn Thr Thr Tyr Thr Ala Tyr Cys Cys Asn
1100 1105 1110

Trp Ser Asn Gly Ala Tyr Ala Thr His Gly Cys Asn Gly Thr Asn
1115 1120 1125

Gly Ala Arg Thr Gly Gly Gly Ala Arg Trp Ser Asn Ala Ala Tyr
1130 1135 1140

Gly Gly Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Ala Ala Tyr

1145 1150 1155

Ala Ala Tyr Thr Ala Tyr Ala Ala Arg Ala Cys Asn Ala Cys Asn
1160 1165 1170

Cys Cys Asn Cys Cys Asn Ala Thr Gly Met Thr Asn Gly Ala Tyr
1175 1180 1185

Trp Ser Asn Gly Ala Tyr Gly Gly Asn Trp Ser Asn Thr Thr Tyr
1190 1195 1200

Thr Thr Tyr Met Thr Asn Thr Ala Tyr Trp Ser Asn Ala Ala Arg
1205 1210 1215

Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Ala Tyr Ala Ala Arg
1220 1225 1230

Trp Ser Asn Met Gly Asn Thr Gly Gly Cys Ala Arg Cys Ala Arg
1235 1240 1245

Gly Gly Asn Ala Ala Tyr Gly Thr Asn Thr Thr Tyr Trp Ser Asn
1250 1255 1260

Thr Gly Tyr Trp Ser Asn Gly Thr Asn Ala Thr Gly Cys Ala Tyr
1265 1270 1275

Gly Ala Arg Gly Cys Asn Met Thr Asn Cys Ala Tyr Ala Ala Tyr
1280 1285 1290

Cys Ala Tyr Thr Ala Tyr Ala Cys Asn Cys Ala Arg Ala Ala Arg
1295 1300 1305

Trp Ser Asn Met Thr Asn Trp Ser Asn Met Thr Asn Trp Ser Asn
1310 1315 1320

Cys Cys Asn Gly Gly Asn Ala Ala Arg
1325 1330

<210> 593
<211> 1359
<212> PRT
<213> Homo Sapiens

<400> 593

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
35 40 45

```
Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60

Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Met Gly Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Met Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Cys Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Ala
        195                 200                 205

Ala Tyr Ala Thr Gly Trp Ser Asn Gly Thr Asn Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Met Thr Asn Ala Ala Arg Met Thr Asn Trp Ser Asn Trp
                245                 250                 255

Ser Asn Gly Thr Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Cys Asn Met Thr Asn Met
    290                 295                 300

Gly Asn Gly Gly Asn Ala Thr His Gly Thr Asn Met Thr Asn Ala Thr
305                 310                 315                 320
```

```
Gly Gly Thr Asn Thr Ala Tyr Gly Thr Asn Met Thr Asn Gly Gly Asn
                325                 330                 335

Gly Cys Asn Met Thr Asn Gly Ala Tyr Ala Thr His Thr Gly Gly Gly
            340                 345                 350

Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala Ala Arg Gly Thr
        355                 360                 365

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn
    370                 375                 380

Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp
385                 390                 395                 400

Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys
                405                 410                 415

Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn
            420                 425                 430

Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly
        435                 440                 445

Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr
    450                 455                 460

Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr
465                 470                 475                 480

Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly
                485                 490                 495

Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly
            500                 505                 510

Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn
        515                 520                 525

Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly
    530                 535                 540

Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser
545                 550                 555                 560

Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn
                565                 570                 575

Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly
            580                 585                 590
```

```
Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr
        595                 600                 605

Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr
    610                 615                 620

Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys
625                 630                 635                 640

Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys
                645                 650                 655

Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn
            660                 665                 670

Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr
        675                 680                 685

Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys
    690                 695                 700

Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn
705                 710                 715                 720

Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly
                725                 730                 735

Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys
            740                 745                 750

Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn
        755                 760                 765

Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala
    770                 775                 780

Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly
785                 790                 795                 800

Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn
                805                 810                 815

Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly
            820                 825                 830

Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly
        835                 840                 845

Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn
    850                 855                 860
```

```
Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala
865                 870                 875                 880

Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala
                885                 890                 895

Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn
            900                 905                 910

Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp
        915                 920                 925

Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr
    930                 935                 940

Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn
945                 950                 955                 960

Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala
                965                 970                 975

Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala
            980                 985                 990

Tyr Ala Ala Arg Gly Gly Asn Met  Thr Asn Cys Cys Asn  Gly Cys Asn
        995                 1000                1005

Cys Cys  Asn Ala Thr His Gly  Ala Arg Ala Ala Arg  Ala Cys Asn
    1010                1015                1020

Ala Thr  His Trp Ser Asn Ala  Ala Arg Ala Cys Asn  Ala Ala Arg
    1025                1030                1035

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Met Gly Asn  Gly Ala Arg
    1040                1045                1050

Cys Cys  Asn Cys Ala Arg Gly  Thr Asn Thr Ala Tyr  Ala Cys Asn
    1055                1060                1065

Met Thr  Asn Cys Cys Asn Cys  Cys Asn Trp Ser Asn  Met Gly Asn
    1070                1075                1080

Gly Ala  Arg Gly Ala Arg Ala  Thr Gly Ala Cys Asn  Ala Ala Arg
    1085                1090                1095

Ala Ala  Tyr Cys Ala Arg Gly  Thr Asn Trp Ser Asn  Met Thr Asn
    1100                1105                1110

Ala Cys  Asn Thr Gly Tyr Met  Thr Asn Gly Thr Asn  Ala Ala Arg
    1115                1120                1125
```

```
Gly Gly  Asn Thr Thr Tyr Thr  Ala Tyr Cys Cys Asn  Trp Ser Asn
    1130                1135                1140

Gly Ala  Tyr Ala Thr His Gly  Cys Asn Gly Thr Asn  Gly Ala Arg
    1145                1150                1155

Thr Gly  Gly Gly Ala Arg Trp  Ser Asn Ala Ala Tyr  Gly Gly Asn
    1160                1165                1170

Cys Ala  Arg Cys Cys Asn Gly  Ala Arg Ala Ala Tyr  Ala Ala Tyr
    1175                1180                1185

Thr Ala  Tyr Ala Ala Arg Ala  Cys Asn Ala Cys Asn  Cys Cys Asn
    1190                1195                1200

Cys Cys  Asn Ala Thr Gly Met  Thr Asn Gly Ala Tyr  Trp Ser Asn
    1205                1210                1215

Gly Ala  Tyr Gly Gly Asn Trp  Ser Asn Thr Thr Tyr  Thr Thr Tyr
    1220                1225                1230

Met Thr  Asn Thr Ala Tyr Trp  Ser Asn Ala Ala Arg  Met Thr Asn
    1235                1240                1245

Ala Cys  Asn Gly Thr Asn Gly  Ala Tyr Ala Ala Arg  Trp Ser Asn
    1250                1255                1260

Met Gly  Asn Thr Gly Gly Cys  Ala Arg Cys Ala Arg  Gly Gly Asn
    1265                1270                1275

Ala Ala  Tyr Gly Thr Asn Thr  Thr Tyr Trp Ser Asn  Thr Gly Tyr
    1280                1285                1290

Trp Ser  Asn Gly Thr Asn Ala  Thr Gly Cys Ala Tyr  Gly Ala Arg
    1295                1300                1305

Gly Cys  Asn Met Thr Asn Cys  Ala Tyr Ala Ala Tyr  Cys Ala Tyr
    1310                1315                1320

Thr Ala  Tyr Ala Cys Asn Cys  Ala Arg Ala Ala Arg  Trp Ser Asn
    1325                1330                1335

Met Thr  Asn Trp Ser Asn Met  Thr Asn Trp Ser Asn  Cys Cys Asn
    1340                1345                1350

Gly Gly  Asn Ala Ala Arg
    1355
```

<210> 594
<211> 1359

<212> PRT
<213> Homo Sapiens

<400> 594

```
Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45

Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60

Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Met Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Ala
        195                 200                 205

Cys Asn Ala Thr His Trp Ser Asn Gly Thr Asn Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Met Thr Asn Ala Ala Arg Met Thr Asn Trp Ser Asn Trp
                245                 250                 255
```

```
Ser Asn Gly Thr Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Ala Tyr Gly Ala Arg Ala
    290                 295                 300

Cys Asn Gly Thr Asn Gly Thr Asn Met Gly Asn Gly Gly Asn Met Thr
305                 310                 315                 320

Asn Ala Thr His Met Gly Asn Thr Ala Tyr Thr Gly Tyr Thr Ala Tyr
                325                 330                 335

Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly
            340                 345                 350

Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala Cys Asn Gly Thr
        355                 360                 365

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn
    370                 375                 380

Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp
385                 390                 395                 400

Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys
                405                 410                 415

Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn
            420                 425                 430

Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly
        435                 440                 445

Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr
    450                 455                 460

Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr
465                 470                 475                 480

Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly
                485                 490                 495

Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly
            500                 505                 510

Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn
        515                 520                 525
```

```
Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly
    530                 535                 540

Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser
545                 550                 555                 560

Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn
                565                 570                 575

Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly
            580                 585                 590

Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr
        595                 600                 605

Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr
    610                 615                 620

Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys
625                 630                 635                 640

Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys
                645                 650                 655

Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn
            660                 665                 670

Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr
        675                 680                 685

Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys
    690                 695                 700

Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn
705                 710                 715                 720

Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly
                725                 730                 735

Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys
            740                 745                 750

Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn
        755                 760                 765

Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala
    770                 775                 780

Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly
785                 790                 795                 800
```

```
Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn
                805                 810                 815

Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly
            820                 825                 830

Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly
        835                 840                 845

Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn
    850                 855                 860

Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala
865                 870                 875                 880

Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala
                885                 890                 895

Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn
            900                 905                 910

Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp
        915                 920                 925

Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr
    930                 935                 940

Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn
945                 950                 955                 960

Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala
                965                 970                 975

Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala
            980                 985                 990

Tyr Ala Ala Arg Gly Gly Asn Met  Thr Asn Cys Cys Asn  Gly Cys Asn
        995                 1000                1005

Cys Cys  Asn Ala Thr His Gly  Ala Arg Ala Ala Arg  Ala Cys Asn
    1010                1015                1020

Ala Thr  His Trp Ser Asn Ala  Ala Arg Ala Cys Asn  Ala Ala Arg
    1025                1030                1035

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Met Gly Asn  Gly Ala Arg
    1040                1045                1050

Cys Cys  Asn Cys Ala Arg Gly  Thr Asn Thr Ala Tyr  Ala Cys Asn
    1055                1060                1065
```

```
Met Thr  Asn Cys Cys Asn Cys  Cys Asn Trp Ser Asn  Met Gly Asn
    1070                 1075                 1080

Gly Ala  Arg Gly Ala Arg Ala  Thr Gly Ala Cys Asn  Ala Ala Arg
    1085                 1090                 1095

Ala Ala  Tyr Cys Ala Arg Gly  Thr Asn Trp Ser Asn  Met Thr Asn
    1100                 1105                 1110

Ala Cys  Asn Thr Gly Tyr Met  Thr Asn Gly Thr Asn  Ala Ala Arg
    1115                 1120                 1125

Gly Gly  Asn Thr Thr Tyr Thr  Ala Tyr Cys Cys Asn  Trp Ser Asn
    1130                 1135                 1140

Gly Ala  Tyr Ala Thr His Gly  Cys Asn Gly Thr Asn  Gly Ala Arg
    1145                 1150                 1155

Thr Gly  Gly Gly Ala Arg Trp  Ser Asn Ala Ala Tyr  Gly Gly Asn
    1160                 1165                 1170

Cys Ala  Arg Cys Cys Asn Gly  Ala Arg Ala Ala Tyr  Ala Ala Tyr
    1175                 1180                 1185

Thr Ala  Tyr Ala Ala Arg Ala  Cys Asn Ala Cys Asn  Cys Cys Asn
    1190                 1195                 1200

Cys Cys  Asn Ala Thr Gly Met  Thr Asn Gly Ala Tyr  Trp Ser Asn
    1205                 1210                 1215

Gly Ala  Tyr Gly Gly Asn Trp  Ser Asn Thr Thr Tyr  Thr Thr Tyr
    1220                 1225                 1230

Met Thr  Asn Thr Ala Tyr Trp  Ser Asn Ala Ala Arg  Met Thr Asn
    1235                 1240                 1245

Ala Cys  Asn Gly Thr Asn Gly  Ala Tyr Ala Ala Arg  Trp Ser Asn
    1250                 1255                 1260

Met Gly  Asn Thr Gly Gly Cys  Ala Arg Cys Ala Arg  Gly Gly Asn
    1265                 1270                 1275

Ala Ala  Tyr Gly Thr Asn Thr  Thr Tyr Trp Ser Asn  Thr Gly Tyr
    1280                 1285                 1290

Trp Ser  Asn Gly Thr Asn Ala  Thr Gly Cys Ala Tyr  Gly Ala Arg
    1295                 1300                 1305

Gly Cys  Asn Met Thr Asn Cys  Ala Tyr Ala Ala Tyr  Cys Ala Tyr
    1310                 1315                 1320
```

```
Thr Ala  Tyr Ala Cys Asn Cys  Ala Arg Ala Ala Arg  Trp Ser Asn
    1325                 1330                 1335


Met Thr  Asn Trp Ser Asn Met  Thr Asn Trp Ser Asn  Cys Cys Asn
    1340                 1345                 1350


Gly Gly  Asn Ala Ala Arg
    1355


<210>  595
<211>  1344
<212>  PRT
<213>  Homo Sapiens

<400>  595

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Ala Tyr Thr
    50                  55                  60


Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80


Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95


Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110


Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125


Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Met Thr Asn Gly Ala Arg
    130                 135                 140


Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
145                 150                 155                 160


Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Ala Cys
                165                 170                 175


Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190
```

```
Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Ala Thr His Ala
        195                 200                 205

Cys Asn Ala Thr His Trp Ser Asn Gly Cys Asn Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Met Thr Asn Ala Ala Arg Met Thr Asn Ala Ala Tyr Trp
                245                 250                 255

Ser Asn Gly Thr Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Ala Tyr Met Gly Asn Gly
    290                 295                 300

Gly Asn Gly Gly Asn Gly Gly Asn Gly Ala Tyr Thr Ala Tyr Gly Gly
305                 310                 315                 320

Asn Met Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly Gly
                325                 330                 335

Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala Cys Asn Gly
            340                 345                 350

Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys
        355                 360                 365

Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn
    370                 375                 380

Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly
385                 390                 395                 400

Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser
                405                 410                 415

Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn
            420                 425                 430

Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met
        435                 440                 445

Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr
    450                 455                 460
```

```
Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn
465                 470                 475                 480

Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly
                485                 490                 495

Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly
            500                 505                 510

Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn
        515                 520                 525

Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp
    530                 535                 540

Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr
545                 550                 555                 560

Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn
                565                 570                 575

Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr
            580                 585                 590

Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala
        595                 600                 605

Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr
    610                 615                 620

Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala
625                 630                 635                 640

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys
                645                 650                 655

Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr
            660                 665                 670

Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys
        675                 680                 685

Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys
    690                 695                 700

Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn
705                 710                 715                 720

Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys
                725                 730                 735
```

```
Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys
            740                 745                 750

Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn
        755                 760                 765

Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr
    770                 775                 780

Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr
785                 790                 795                 800

Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn
                805                 810                 815

Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr
            820                 825                 830

Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr
        835                 840                 845

Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn
    850                 855                 860

Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly
865                 870                 875                 880

Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser
                885                 890                 895

Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn
            900                 905                 910

Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly
        915                 920                 925

Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr
    930                 935                 940

Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr
945                 950                 955                 960

Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala
                965                 970                 975

Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys Cys Asn Gly Cys
            980                 985                 990

Asn Cys Cys Asn Ala Thr His Gly  Ala Arg Ala Ala Arg  Ala Cys Asn
        995                 1000                1005
```

```
Ala Thr  His Trp Ser Asn Ala  Ala Arg Ala Cys Asn  Ala Ala Arg
    1010                1015                1020

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Met Gly Asn  Gly Ala Arg
    1025                1030                1035

Cys Cys  Asn Cys Ala Arg Gly  Thr Asn Thr Ala Tyr  Ala Cys Asn
    1040                1045                1050

Met Thr  Asn Cys Cys Asn Cys  Cys Asn Trp Ser Asn  Met Gly Asn
    1055                1060                1065

Gly Ala  Arg Gly Ala Arg Ala  Thr Gly Ala Cys Asn  Ala Ala Arg
    1070                1075                1080

Ala Ala  Tyr Cys Ala Arg Gly  Thr Asn Trp Ser Asn  Met Thr Asn
    1085                1090                1095

Ala Cys  Asn Thr Gly Tyr Met  Thr Asn Gly Thr Asn  Ala Ala Arg
    1100                1105                1110

Gly Gly  Asn Thr Thr Tyr Thr  Ala Tyr Cys Cys Asn  Trp Ser Asn
    1115                1120                1125

Gly Ala  Tyr Ala Thr His Gly  Cys Asn Gly Thr Asn  Gly Ala Arg
    1130                1135                1140

Thr Gly  Gly Gly Ala Arg Trp  Ser Asn Ala Ala Tyr  Gly Gly Asn
    1145                1150                1155

Cys Ala  Arg Cys Cys Asn Gly  Ala Arg Ala Ala Tyr  Ala Ala Tyr
    1160                1165                1170

Thr Ala  Tyr Ala Ala Arg Ala  Cys Asn Ala Cys Asn  Cys Cys Asn
    1175                1180                1185

Cys Cys  Asn Ala Thr Gly Met  Thr Asn Gly Ala Tyr  Trp Ser Asn
    1190                1195                1200

Gly Ala  Tyr Gly Gly Asn Trp  Ser Asn Thr Thr Tyr  Thr Thr Tyr
    1205                1210                1215

Met Thr  Asn Thr Ala Tyr Trp  Ser Asn Ala Ala Arg  Met Thr Asn
    1220                1225                1230

Ala Cys  Asn Gly Thr Asn Gly  Ala Tyr Ala Ala Arg  Trp Ser Asn
    1235                1240                1245

Met Gly  Asn Thr Gly Gly Cys  Ala Arg Cys Ala Arg  Gly Gly Asn
    1250                1255                1260
```

```
Ala Ala  Tyr Gly Thr Asn Thr  Thr Tyr Trp Ser Asn  Thr Gly Tyr
    1265                1270                1275


Trp Ser  Asn Gly Thr Asn Ala  Thr Gly Cys Ala Tyr  Gly Ala Arg
    1280                1285                1290


Gly Cys  Asn Met Thr Asn Cys  Ala Tyr Ala Ala Tyr  Cys Ala Tyr
    1295                1300                1305


Thr Ala  Tyr Ala Cys Asn Cys  Ala Arg Ala Ala Arg  Trp Ser Asn
    1310                1315                1320


Met Thr  Asn Trp Ser Asn Met  Thr Asn Trp Ser Asn  Cys Cys Asn
    1325                1330                1335


Gly Gly  Asn Ala Ala Arg
    1340


<210>  596
<211>  1344
<212>  PRT
<213>  Homo Sapiens

<400>  596

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Ala Tyr Thr
    50                  55                  60


Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80


Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95


Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110


Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125


Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Met Thr Asn Gly Ala Arg
    130                 135                 140


Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
```

```
145                 150                 155                 160

Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Ala Thr His Ala
        195                 200                 205

Cys Asn Ala Thr His Trp Ser Asn Gly Cys Asn Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Met Thr Asn Ala Ala Arg Met Thr Asn Ala Ala Tyr Trp
                245                 250                 255

Ser Asn Gly Thr Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Ala Tyr Met Gly Asn Gly
    290                 295                 300

Gly Asn Gly Gly Asn Gly Gly Asn Gly Ala Tyr Thr Ala Tyr Gly Gly
305                 310                 315                 320

Asn Met Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly Gly
                325                 330                 335

Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala Cys Asn Gly
            340                 345                 350

Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys
        355                 360                 365

Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn
    370                 375                 380

Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly
385                 390                 395                 400

Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser
                405                 410                 415

Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn
```

```
            420                 425                 430

Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met
        435                 440                 445

Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr
    450                 455                 460

Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn
465                 470                 475                 480

Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly
                485                 490                 495

Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly
            500                 505                 510

Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn
        515                 520                 525

Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp
    530                 535                 540

Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr
545                 550                 555                 560

Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn
                565                 570                 575

Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr
            580                 585                 590

Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala
        595                 600                 605

Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr
    610                 615                 620

Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala
625                 630                 635                 640

Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys
                645                 650                 655

Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr
            660                 665                 670

Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys
        675                 680                 685

Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys
```

690 695 700

Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn
705 710 715 720

Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys
725 730 735

Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys
740 745 750

Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn
755 760 765

Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr
770 775 780

Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr
785 790 795 800

Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn
805 810 815

Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr
820 825 830

Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr
835 840 845

Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn
850 855 860

Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly
865 870 875 880

Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser
885 890 895

Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn
900 905 910

Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly
915 920 925

Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr
930 935 940

Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr
945 950 955 960

Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala

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                965                 970                 975

Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys Cys Asn Gly Cys
            980                 985                 990

Asn Cys Cys Asn Ala Thr His Gly  Ala Arg Ala Ala Arg  Ala Cys Asn
        995                 1000                1005

Ala Thr  His Trp Ser Asn Ala  Ala Arg Ala Cys Asn  Ala Ala Arg
    1010                1015                1020

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Met Gly Asn  Gly Ala Arg
    1025                1030                1035

Cys Cys  Asn Cys Ala Arg Gly  Thr Asn Thr Ala Tyr  Ala Cys Asn
    1040                1045                1050

Met Thr  Asn Cys Cys Asn Cys  Cys Asn Trp Ser Asn  Met Gly Asn
    1055                1060                1065

Gly Ala  Arg Gly Ala Arg Ala  Thr Gly Ala Cys Asn  Ala Ala Arg
    1070                1075                1080

Ala Ala  Tyr Cys Ala Arg Gly  Thr Asn Trp Ser Asn  Met Thr Asn
    1085                1090                1095

Ala Cys  Asn Thr Gly Tyr Met  Thr Asn Gly Thr Asn  Ala Ala Arg
    1100                1105                1110

Gly Gly  Asn Thr Thr Tyr Thr  Ala Tyr Cys Cys Asn  Trp Ser Asn
    1115                1120                1125

Gly Ala  Tyr Ala Thr His Gly  Cys Asn Gly Thr Asn  Gly Ala Arg
    1130                1135                1140

Thr Gly  Gly Gly Ala Arg Trp  Ser Asn Ala Ala Tyr  Gly Gly Asn
    1145                1150                1155

Cys Ala  Arg Cys Cys Asn Gly  Ala Arg Ala Ala Tyr  Ala Ala Tyr
    1160                1165                1170

Thr Ala  Tyr Ala Ala Arg Ala  Cys Asn Ala Cys Asn  Cys Cys Asn
    1175                1180                1185

Cys Cys  Asn Ala Thr Gly Met  Thr Asn Gly Ala Tyr  Trp Ser Asn
    1190                1195                1200

Gly Ala  Tyr Gly Gly Asn Trp  Ser Asn Thr Thr Tyr  Thr Thr Tyr
    1205                1210                1215

Met Thr  Asn Thr Ala Tyr Trp  Ser Asn Ala Ala Arg  Met Thr Asn
```

1220 1225 1230

Ala Cys Asn Gly Thr Asn Gly Ala Tyr Ala Ala Arg Trp Ser Asn
1235 1240 1245

Met Gly Asn Thr Gly Gly Cys Ala Arg Cys Ala Arg Gly Gly Asn
1250 1255 1260

Ala Ala Tyr Gly Thr Asn Thr Thr Tyr Trp Ser Asn Thr Gly Tyr
1265 1270 1275

Trp Ser Asn Gly Thr Asn Ala Thr Gly Cys Ala Tyr Gly Ala Arg
1280 1285 1290

Gly Cys Asn Met Thr Asn Cys Ala Tyr Ala Ala Tyr Cys Ala Tyr
1295 1300 1305

Thr Ala Tyr Ala Cys Asn Cys Ala Arg Ala Ala Arg Trp Ser Asn
1310 1315 1320

Met Thr Asn Trp Ser Asn Met Thr Asn Trp Ser Asn Cys Cys Asn
1325 1330 1335

Gly Gly Asn Ala Ala Arg
1340

<210> 597
<211> 1335
<212> PRT
<213> Homo Sapiens

<400> 597

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
35 40 45

Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
50 55 60

Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65 70 75 80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
85 90 95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
100 105 110

```
Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Met Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
145                 150                 155                 160

Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Ala Thr His Ala
        195                 200                 205

Cys Asn Ala Ala Arg Trp Ser Asn Gly Thr Asn Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Met Thr Asn Ala Ala Arg Met Thr Asn Trp Ser Asn Trp
                245                 250                 255

Ser Asn Gly Thr Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Trp Ser Asn Ala Ala Tyr Ala
    290                 295                 300

Ala Tyr Thr Ala Tyr Gly Gly Asn Thr Gly Tyr Thr Thr Tyr Gly Cys
305                 310                 315                 320

Asn Met Thr Asn Thr Gly Gly Gly Gly Asn Met Gly Asn Gly Gly Asn
                325                 330                 335

Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp
            340                 345                 350

Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala
        355                 360                 365

Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr
    370                 375                 380
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Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp
385                 390                 395                 400

Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala
                405                 410                 415

Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn
            420                 425                 430

Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly
        435                 440                 445

Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys
    450                 455                 460

Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly
465                 470                 475                 480

Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala
                485                 490                 495

Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys
            500                 505                 510

Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn
        515                 520                 525

Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr
    530                 535                 540

Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr
545                 550                 555                 560

Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn
                565                 570                 575

Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys
            580                 585                 590

Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala
        595                 600                 605

Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn
    610                 615                 620

Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly
625                 630                 635                 640

Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly
                645                 650                 655
```

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Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg
            660                 665                 670

Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly
        675                 680                 685

Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly
    690                 695                 700

Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn
705                 710                 715                 720

Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala
                725                 730                 735

Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr
            740                 745                 750

His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg
        755                 760                 765

Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly
    770                 775                 780

Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala
785                 790                 795                 800

Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg
                805                 810                 815

Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly
            820                 825                 830

Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala
        835                 840                 845

Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg
    850                 855                 860

Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr
865                 870                 875                 880

Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly
                885                 890                 895

Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn
            900                 905                 910

Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly
        915                 920                 925
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```
Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala
    930                 935                 940

Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg
945                 950                 955                 960

Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met
                965                 970                 975

Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly Ala
            980                 985                 990

Arg Ala Ala Arg Ala Cys Asn Ala  Thr His Trp Ser Asn  Ala Ala Arg
        995                 1000                1005

Ala Cys  Asn Ala Ala Arg Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1010                1015                1020

Met Gly  Asn Gly Ala Arg Cys  Cys Asn Cys Ala Arg  Gly Thr Asn
    1025                1030                1035

Thr Ala  Tyr Ala Cys Asn Met  Thr Asn Cys Cys Asn  Cys Cys Asn
    1040                1045                1050

Trp Ser  Asn Met Gly Asn Gly  Ala Arg Gly Ala Arg  Ala Thr Gly
    1055                1060                1065

Ala Cys  Asn Ala Ala Arg Ala  Ala Tyr Cys Ala Arg  Gly Thr Asn
    1070                1075                1080

Trp Ser  Asn Met Thr Asn Ala  Cys Asn Thr Gly Tyr  Met Thr Asn
    1085                1090                1095

Gly Thr  Asn Ala Ala Arg Gly  Gly Asn Thr Thr Tyr  Thr Ala Tyr
    1100                1105                1110

Cys Cys  Asn Trp Ser Asn Gly  Ala Tyr Ala Thr His  Gly Cys Asn
    1115                1120                1125

Gly Thr  Asn Gly Ala Arg Thr  Gly Gly Gly Ala Arg  Trp Ser Asn
    1130                1135                1140

Ala Ala  Tyr Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Gly Ala Arg
    1145                1150                1155

Ala Ala  Tyr Ala Ala Tyr Thr  Ala Tyr Ala Ala Arg  Ala Cys Asn
    1160                1165                1170

Ala Cys  Asn Cys Cys Asn Cys  Cys Asn Ala Thr Gly  Met Thr Asn
    1175                1180                1185
```

```
Gly Ala  Tyr Trp Ser Asn Gly  Ala Tyr Gly Gly Asn  Trp Ser Asn
    1190                 1195                 1200


Thr Thr  Tyr Thr Thr Tyr Met  Thr Asn Thr Ala Tyr  Trp Ser Asn
    1205                 1210                 1215


Ala Ala  Arg Met Thr Asn Ala  Cys Asn Gly Thr Asn  Gly Ala Tyr
    1220                 1225                 1230


Ala Ala  Arg Trp Ser Asn Met  Gly Asn Thr Gly Gly  Cys Ala Arg
    1235                 1240                 1245


Cys Ala  Arg Gly Gly Asn Ala  Ala Tyr Gly Thr Asn  Thr Thr Tyr
    1250                 1255                 1260


Trp Ser  Asn Thr Gly Tyr Trp  Ser Asn Gly Thr Asn  Ala Thr Gly
    1265                 1270                 1275


Cys Ala  Tyr Gly Ala Arg Gly  Cys Asn Met Thr Asn  Cys Ala Tyr
    1280                 1285                 1290


Ala Ala  Tyr Cys Ala Tyr Thr  Ala Tyr Ala Cys Asn  Cys Ala Arg
    1295                 1300                 1305


Ala Ala  Arg Trp Ser Asn Met  Thr Asn Trp Ser Asn  Met Thr Asn
    1310                 1315                 1320


Trp Ser  Asn Cys Cys Asn Gly  Gly Asn Ala Ala Arg
    1325                 1330                 1335


<210>  598
<211>  1335
<212>  PRT
<213>  Homo Sapiens

<400>  598

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1               5                  10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60


Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80
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```
Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Met Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
145                 150                 155                 160

Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Ala Thr His Ala
        195                 200                 205

Cys Asn Ala Ala Arg Trp Ser Asn Gly Thr Asn Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Met Thr Asn Ala Ala Arg Met Thr Asn Trp Ser Asn Trp
                245                 250                 255

Ser Asn Gly Thr Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Trp Ser Asn Ala Ala Tyr Ala
    290                 295                 300

Ala Tyr Thr Ala Tyr Gly Gly Asn Thr Gly Tyr Thr Thr Tyr Gly Cys
305                 310                 315                 320

Asn Met Thr Asn Thr Gly Gly Gly Gly Asn Met Gly Asn Gly Gly Asn
                325                 330                 335

Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp
            340                 345                 350
```

```
Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala
        355                 360                 365

Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr
    370                 375                 380

Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp
385                 390                 395                 400

Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala
                405                 410                 415

Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn
            420                 425                 430

Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly
        435                 440                 445

Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys
    450                 455                 460

Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly
465                 470                 475                 480

Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala
                485                 490                 495

Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys
            500                 505                 510

Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn
        515                 520                 525

Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr
    530                 535                 540

Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr
545                 550                 555                 560

Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn
                565                 570                 575

Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys
            580                 585                 590

Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala
        595                 600                 605

Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn
    610                 615                 620
```

```
Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly
625                 630                 635                 640

Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly
                645                 650                 655

Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg
            660                 665                 670

Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly
        675                 680                 685

Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly
    690                 695                 700

Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn
705                 710                 715                 720

Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala
                725                 730                 735

Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr
            740                 745                 750

His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg
        755                 760                 765

Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly
    770                 775                 780

Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala
785                 790                 795                 800

Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg
                805                 810                 815

Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly
            820                 825                 830

Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala
        835                 840                 845

Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg
    850                 855                 860

Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr
865                 870                 875                 880

Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly
                885                 890                 895
```

```
Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn
            900                 905                 910

Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly
        915                 920                 925

Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala
    930                 935                 940

Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg
945                 950                 955                 960

Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met
                965                 970                 975

Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His Gly Ala
            980                 985                 990

Arg Ala Ala Arg Ala Cys Asn Ala  Thr His Trp Ser Asn  Ala Ala Arg
        995                 1000                1005

Ala Cys  Asn Ala Ala Arg Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1010                1015                1020

Met Gly  Asn Gly Ala Arg Cys  Cys Asn Cys Ala Arg  Gly Thr Asn
    1025                1030                1035

Thr Ala  Tyr Ala Cys Asn Met  Thr Asn Cys Cys Asn  Cys Cys Asn
    1040                1045                1050

Trp Ser  Asn Met Gly Asn Gly  Ala Arg Gly Ala Arg  Ala Thr Gly
    1055                1060                1065

Ala Cys  Asn Ala Ala Arg Ala  Ala Tyr Cys Ala Arg  Gly Thr Asn
    1070                1075                1080

Trp Ser  Asn Met Thr Asn Ala  Cys Asn Thr Gly Tyr  Met Thr Asn
    1085                1090                1095

Gly Thr  Asn Ala Ala Arg Gly  Gly Asn Thr Thr Tyr  Thr Ala Tyr
    1100                1105                1110

Cys Cys  Asn Trp Ser Asn Gly  Ala Tyr Ala Thr His  Gly Cys Asn
    1115                1120                1125

Gly Thr  Asn Gly Ala Arg Thr  Gly Gly Gly Ala Arg  Trp Ser Asn
    1130                1135                1140

Ala Ala  Tyr Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Gly Ala Arg
    1145                1150                1155
```

```
Ala Ala  Tyr Ala Ala Tyr Thr  Ala Tyr Ala Ala Arg  Ala Cys Asn
    1160                 1165                 1170


Ala Cys  Asn Cys Cys Asn Cys  Cys Asn Ala Thr Gly  Met Thr Asn
    1175                 1180                 1185


Gly Ala  Tyr Trp Ser Asn Gly  Ala Tyr Gly Gly Asn  Trp Ser Asn
    1190                 1195                 1200


Thr Thr  Tyr Thr Thr Tyr Met  Thr Asn Thr Ala Tyr  Trp Ser Asn
    1205                 1210                 1215


Ala Ala  Arg Met Thr Asn Ala  Cys Asn Gly Thr Asn  Gly Ala Tyr
    1220                 1225                 1230


Ala Ala  Arg Trp Ser Asn Met  Gly Asn Thr Gly Gly  Cys Ala Arg
    1235                 1240                 1245


Cys Ala  Arg Gly Gly Asn Ala  Ala Tyr Gly Thr Asn  Thr Thr Tyr
    1250                 1255                 1260


Trp Ser  Asn Thr Gly Tyr Trp  Ser Asn Gly Thr Asn  Ala Thr Gly
    1265                 1270                 1275


Cys Ala  Tyr Gly Ala Arg Gly  Cys Asn Met Thr Asn  Cys Ala Tyr
    1280                 1285                 1290


Ala Ala  Tyr Cys Ala Tyr Thr  Ala Tyr Ala Cys Asn  Cys Ala Arg
    1295                 1300                 1305


Ala Ala  Arg Trp Ser Asn Met  Thr Asn Trp Ser Asn  Met Thr Asn
    1310                 1315                 1320


Trp Ser  Asn Cys Cys Asn Gly  Gly Asn Ala Ala Arg
    1325                 1330                 1335


<210>  599
<211>  1377
<212>  PRT
<213>  Homo Sapiens

<400>  599

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1               5                  10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45
```

```
Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60

Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Met Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
145                 150                 155                 160

Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Ala
        195                 200                 205

Cys Asn Ala Thr His Trp Ser Asn Gly Thr Asn Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Met Thr Asn Ala Ala Arg Met Thr Asn Trp Ser Asn Trp
                245                 250                 255

Ser Asn Gly Thr Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Ala Tyr Ala
    290                 295                 300

Ala Tyr Thr Ala Tyr Gly Gly Asn Met Thr Asn Thr Ala Tyr Thr Ala
305                 310                 315                 320
```

```
Tyr Thr Ala Tyr Gly Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn
                325                 330                 335

Thr Ala Tyr Cys Cys Asn Trp Ser Asn Thr Ala Tyr Thr Ala Tyr Thr
            340                 345                 350

Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly
        355                 360                 365

Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala Cys Asn
    370                 375                 380

Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly
385                 390                 395                 400

Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys
                405                 410                 415

Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn
            420                 425                 430

Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp
        435                 440                 445

Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys
    450                 455                 460

Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr
465                 470                 475                 480

Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr
                485                 490                 495

Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys
            500                 505                 510

Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn
        515                 520                 525

Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly
    530                 535                 540

Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys
545                 550                 555                 560

Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn
                565                 570                 575

Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met
            580                 585                 590
```

```
Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys
        595                 600                 605

Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr
    610                 615                 620

Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr
625                 630                 635                 640

Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala
                645                 650                 655

Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr
            660                 665                 670

Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala
        675                 680                 685

Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly
    690                 695                 700

Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn
705                 710                 715                 720

Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys
                725                 730                 735

Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser
            740                 745                 750

Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn
        755                 760                 765

Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala
    770                 775                 780

Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly
785                 790                 795                 800

Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn
                805                 810                 815

Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly
            820                 825                 830

Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys
        835                 840                 845

Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr
    850                 855                 860
```

```
Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly
865                 870                 875                 880

Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys
                885                 890                 895

Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn
            900                 905                 910

Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp
        915                 920                 925

Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr
    930                 935                 940

Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn
945                 950                 955                 960

Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met
                965                 970                 975

Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala
            980                 985                 990

Tyr Ala Ala Arg Thr Gly Tyr Ala  Ala Arg Gly Thr Asn  Trp Ser Asn
        995                 1000                1005

Ala Ala  Tyr Ala Ala Arg Gly  Gly Asn Met Thr Asn  Cys Cys Asn
    1010                1015                1020

Gly Cys  Asn Cys Cys Asn Ala  Thr His Gly Ala Arg  Ala Ala Arg
    1025                1030                1035

Ala Cys  Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
    1040                1045                1050

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
    1055                1060                1065

Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1070                1075                1080

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1085                1090                1095

Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1100                1105                1110

Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1115                1120                1125
```

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Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1130                1135                1140

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1145                1150                1155

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
    1160                1165                1170

Gly Ala  Arg Thr Gly Gly Gly  Ala Arg Trp Ser Asn  Ala Ala Tyr
    1175                1180                1185

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Gly Ala Arg  Ala Ala Tyr
    1190                1195                1200

Ala Ala  Tyr Thr Ala Tyr Ala  Ala Arg Ala Cys Asn  Ala Cys Asn
    1205                1210                1215

Cys Cys  Asn Cys Cys Asn Ala  Thr Gly Met Thr Asn  Gly Ala Tyr
    1220                1225                1230

Trp Ser  Asn Gly Ala Tyr Gly  Gly Asn Trp Ser Asn  Thr Thr Tyr
    1235                1240                1245

Thr Thr  Tyr Met Thr Asn Thr  Ala Tyr Trp Ser Asn  Ala Ala Arg
    1250                1255                1260

Met Thr  Asn Ala Cys Asn Gly  Thr Asn Gly Ala Tyr  Ala Ala Arg
    1265                1270                1275

Trp Ser  Asn Met Gly Asn Thr  Gly Gly Cys Ala Arg  Cys Ala Arg
    1280                1285                1290

Gly Gly  Asn Ala Ala Tyr Gly  Thr Asn Thr Thr Tyr  Trp Ser Asn
    1295                1300                1305

Thr Gly  Tyr Trp Ser Asn Gly  Thr Asn Ala Thr Gly  Cys Ala Tyr
    1310                1315                1320

Gly Ala  Arg Gly Cys Asn Met  Thr Asn Cys Ala Tyr  Ala Ala Tyr
    1325                1330                1335

Cys Ala  Tyr Thr Ala Tyr Ala  Cys Asn Cys Ala Arg  Ala Ala Arg
    1340                1345                1350

Trp Ser  Asn Met Thr Asn Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1355                1360                1365

Cys Cys  Asn Gly Gly Asn Ala  Ala Arg
    1370                1375
```

<210> 600
<211> 1353
<212> PRT
<213> Homo Sapiens

<400> 600

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Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45

Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60

Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Ala Ala Tyr Thr
            100                 105                 110

Gly Gly Gly Thr Asn Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Met Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Gly Gly Asn Ala Cys
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Ala
        195                 200                 205

Cys Asn Ala Thr His Trp Ser Asn Gly Thr Asn Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Met Thr Asn Ala Ala Arg Met Thr Asn Thr Thr Tyr Trp
```

245 250 255

Ser Asn Gly Thr Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala
260 265 270

Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Thr Tyr
275 280 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Ala Cys Asn Thr Ala Tyr Thr
290 295 300

Ala Tyr Gly Ala Tyr Ala Thr His Met Thr Asn Ala Cys Asn Gly Gly
305 310 315 320

Asn Thr Ala Tyr Cys Cys Asn Thr Thr Tyr Thr Ala Tyr Thr Thr Tyr
325 330 335

Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
340 345 350

Gly Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr
355 360 365

Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn
370 375 380

Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr
385 390 395 400

Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly
405 410 415

Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn
420 425 430

Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met
435 440 445

Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala
450 455 460

Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg
465 470 475 480

Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr
485 490 495

Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr
500 505 510

Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr

```
        515                 520                 525

Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met
    530                 535                 540

Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr
545                 550                 555                 560

Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp
            580                 585                 590

Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys
        595                 600                 605

Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr
    610                 615                 620

Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys
625                 630                 635                 640

Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr
                645                 650                 655

Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg
            660                 665                 670

Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly
        675                 680                 685

Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys
    690                 695                 700

Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn
705                 710                 715                 720

Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met
                725                 730                 735

Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys
            740                 745                 750

Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly
        755                 760                 765

Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly
    770                 775                 780

Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr
```

785 790 795 800

Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr
805 810 815

Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys
820 825 830

Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr
835 840 845

Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn
850 855 860

Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala
865 870 875 880

Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala
885 890 895

Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr
900 905 910

Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met
915 920 925

Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala
930 935 940

Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn
945 950 955 960

Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala
965 970 975

Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly
980 985 990

Asn Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr His
995 1000 1005

Gly Ala Arg Ala Ala Arg Ala Cys Asn Ala Thr His Trp Ser Asn
1010 1015 1020

Ala Ala Arg Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Ala Arg
1025 1030 1035

Cys Cys Asn Met Gly Asn Gly Ala Arg Cys Cys Asn Cys Ala Arg
1040 1045 1050

Gly Thr Asn Thr Ala Tyr Ala Cys Asn Met Thr Asn Cys Cys Asn

```
    1055                1060                1065

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1070                1075                1080

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1085                1090                1095

Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1100                1105                1110

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1115                1120                1125

Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1130                1135                1140

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1145                1150                1155

Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1160                1165                1170

Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1175                1180                1185

Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1190                1195                1200

Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1205                1210                1215

Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1220                1225                1230

Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1235                1240                1245

Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1250                1255                1260

Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1265                1270                1275

Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1280                1285                1290

Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1295                1300                1305

Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
```

1310 1315 1320

Cys Ala Arg Ala Ala Arg Trp Ser Asn Met Thr Asn Trp Ser Asn
1325 1330 1335

Met Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn Ala Ala Arg
1340 1345 1350

<210> 601
<211> 1353
<212> PRT
<213> Homo Sapiens

<400> 601

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
35 40 45

Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
50 55 60

Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65 70 75 80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
85 90 95

Gly Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Ala Ala Tyr Thr
100 105 110

Gly Gly Gly Thr Asn Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
115 120 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Met Thr Asn Gly Ala Arg
130 135 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Thr
145 150 155 160

Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Gly Gly Asn Ala Cys
165 170 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
180 185 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Ala
195 200 205

```
Cys Asn Ala Thr His Trp Ser Asn Gly Thr Asn Gly Ala Tyr Ala Cys
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Met Thr Asn Ala Ala Arg Met Thr Asn Thr Thr Tyr Trp
                245                 250                 255

Ser Asn Gly Thr Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Thr Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Ala Cys Asn Thr Ala Tyr Thr
    290                 295                 300

Ala Tyr Gly Ala Tyr Ala Thr His Met Thr Asn Ala Cys Asn Gly Gly
305                 310                 315                 320

Asn Thr Ala Tyr Cys Cys Asn Thr Thr Tyr Thr Ala Tyr Thr Thr Tyr
                325                 330                 335

Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
            340                 345                 350

Gly Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr
        355                 360                 365

Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn
    370                 375                 380

Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr
385                 390                 395                 400

Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly
                405                 410                 415

Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn
            420                 425                 430

Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met
        435                 440                 445

Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala
    450                 455                 460

Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg
465                 470                 475                 480
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```
Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr
                485                 490                 495

Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr
            500                 505                 510

Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr
        515                 520                 525

Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met
    530                 535                 540

Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr
545                 550                 555                 560

Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp
            580                 585                 590

Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys
        595                 600                 605

Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr
    610                 615                 620

Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys
625                 630                 635                 640

Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr
                645                 650                 655

Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg
            660                 665                 670

Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly
        675                 680                 685

Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys
    690                 695                 700

Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn
705                 710                 715                 720

Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met
                725                 730                 735

Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys
            740                 745                 750
```

```
Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly
        755                 760                 765

Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly
    770                 775                 780

Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr
785                 790                 795                 800

Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr
                805                 810                 815

Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys
            820                 825                 830

Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr
        835                 840                 845

Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn
    850                 855                 860

Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala
865                 870                 875                 880

Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala
                885                 890                 895

Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr
            900                 905                 910

Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met
        915                 920                 925

Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala
    930                 935                 940

Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn
945                 950                 955                 960

Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala
                965                 970                 975

Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly
            980                 985                 990

Asn Met Thr Asn Cys Cys Asn Gly  Cys Asn Cys Cys Asn  Ala Thr His
        995                 1000                1005

Gly Ala  Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
    1010                1015                1020
```

```
Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1025                1030                1035

Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1040                1045                1050

Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1055                1060                1065

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1070                1075                1080

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1085                1090                1095

Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1100                1105                1110

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1115                1120                1125

Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1130                1135                1140

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1145                1150                1155

Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1160                1165                1170

Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1175                1180                1185

Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1190                1195                1200

Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1205                1210                1215

Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1220                1225                1230

Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1235                1240                1245

Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1250                1255                1260

Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1265                1270                1275
```

```
Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1280                1285                1290


Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1295                1300                1305


Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1310                1315                1320


Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1325                1330                1335


Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1340                1345                1350


<210>  602
<211>  1338
<212>  PRT
<213>  Homo Sapiens

<400>  602

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Cys
1               5                   10                  15


Ala Arg Thr Gly Gly Gly Gly Asn Gly Cys Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Met Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Gly Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60


Gly Tyr Gly Cys Asn Gly Thr Asn Thr Ala Tyr Gly Gly Asn Gly Gly
65                  70                  75                  80


Asn Trp Ser Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Ala Tyr
                85                  90                  95


Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr Gly Gly Ala Thr His Met
            100                 105                 110


Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125


Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr His
    130                 135                 140


Gly Gly Asn Gly Ala Arg Ala Thr His Ala Ala Tyr Cys Ala Tyr Trp
145                 150                 155                 160
```

```
Ser Asn Gly Gly Asn Trp Ser Asn Ala Cys Asn Ala Ala Tyr Thr Ala
                165                 170                 175

Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn Met Thr Asn Ala Ala Arg
            180                 185                 190

Trp Ser Asn Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Trp
        195                 200                 205

Ser Asn Gly Thr Asn Gly Ala Tyr Ala Cys Asn Trp Ser Asn Ala Ala
    210                 215                 220

Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Met Thr Asn
225                 230                 235                 240

Ala Ala Arg Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Ala
                245                 250                 255

Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala Tyr Ala Cys Asn Gly Cys
            260                 265                 270

Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn
        275                 280                 285

Met Gly Asn Gly Gly Asn Gly Gly Asn Thr Ala Tyr Trp Ser Asn Trp
    290                 295                 300

Ser Asn Trp Ser Asn Thr Gly Gly Thr Ala Tyr Thr Gly Gly Thr Thr
305                 310                 315                 320

Tyr Gly Ala Tyr Cys Cys Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg
                325                 330                 335

Gly Gly Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn Gly
            340                 345                 350

Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys
        355                 360                 365

Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn
    370                 375                 380

Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr
385                 390                 395                 400

Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser
                405                 410                 415

Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn
            420                 425                 430
```

```
Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala
        435                 440                 445

Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala
    450                 455                 460

Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn
465                 470                 475                 480

Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met
                485                 490                 495

Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala
            500                 505                 510

Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn
        515                 520                 525

Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met
    530                 535                 540

Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser
545                 550                 555                 560

Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn
                565                 570                 575

Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala
            580                 585                 590

Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly
        595                 600                 605

Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg
    610                 615                 620

Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly
625                 630                 635                 640

Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala
                645                 650                 655

Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn
            660                 665                 670

Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys
        675                 680                 685

Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys
    690                 695                 700
```

```
Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr
705                 710                 715                 720

Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys
                725                 730                 735

Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr
            740                 745                 750

Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn
        755                 760                 765

Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly
    770                 775                 780

Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala
785                 790                 795                 800

Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn
                805                 810                 815

Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly
            820                 825                 830

Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr
        835                 840                 845

Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn
    850                 855                 860

Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys
865                 870                 875                 880

Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr
                885                 890                 895

Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn
            900                 905                 910

Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys
        915                 920                 925

Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly
    930                 935                 940

Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr
945                 950                 955                 960

Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly
                965                 970                 975
```

```
Gly Asn Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr
            980                 985                 990


His Gly Ala Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
        995                1000                1005


Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1010                1015                1020


Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1025                1030                1035


Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1040                1045                1050


Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1055                1060                1065


Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1070                1075                1080


Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1085                1090                1095


Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1100                1105                1110


Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1115                1120                1125


Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1130                1135                1140


Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1145                1150                1155


Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1160                1165                1170


Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1175                1180                1185


Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1190                1195                1200


Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1205                1210                1215


Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1220                1225                1230
```

```
Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1235                 1240                 1245


Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1250                 1255                 1260


Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1265                 1270                 1275


Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1280                 1285                 1290


Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1295                 1300                 1305


Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1310                 1315                 1320


Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1325                 1330                 1335


<210>  603
<211>  1338
<212>  PRT
<213>  Homo Sapiens

<400>  603

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Cys
1               5                  10                  15


Ala Arg Thr Gly Gly Gly Gly Asn Gly Cys Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Met Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Gly Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60


Gly Tyr Gly Cys Asn Gly Thr Asn Thr Ala Tyr Gly Gly Asn Gly Gly
65                  70                  75                  80


Asn Trp Ser Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Ala Tyr
                85                  90                  95


Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr Gly Gly Ala Thr His Met
            100                 105                 110


Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125
```

```
Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr His
    130                 135                 140

Gly Gly Asn Gly Ala Arg Ala Thr His Ala Ala Tyr Cys Ala Tyr Trp
145                 150                 155                 160

Ser Asn Gly Gly Asn Trp Ser Asn Ala Cys Asn Ala Ala Tyr Thr Ala
                165                 170                 175

Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn Met Thr Asn Ala Ala Arg
            180                 185                 190

Trp Ser Asn Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr His Trp
        195                 200                 205

Ser Asn Gly Thr Asn Gly Ala Tyr Ala Cys Asn Trp Ser Asn Ala Ala
    210                 215                 220

Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Met Thr Asn
225                 230                 235                 240

Ala Ala Arg Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Ala
                245                 250                 255

Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala Tyr Ala Cys Asn Gly Cys
            260                 265                 270

Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn
        275                 280                 285

Met Gly Asn Gly Gly Asn Gly Gly Asn Thr Ala Tyr Trp Ser Asn Trp
    290                 295                 300

Ser Asn Trp Ser Asn Thr Gly Gly Thr Thr Tyr Thr Gly Gly Thr Thr
305                 310                 315                 320

Tyr Gly Ala Tyr Cys Cys Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg
                325                 330                 335

Gly Gly Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn Gly
            340                 345                 350

Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys
        355                 360                 365

Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn
    370                 375                 380

Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr
385                 390                 395                 400
```

```
Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser
                405                 410                 415

Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn
            420                 425                 430

Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala
        435                 440                 445

Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala
    450                 455                 460

Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn
465                 470                 475                 480

Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met
                485                 490                 495

Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala
            500                 505                 510

Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn
        515                 520                 525

Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met
    530                 535                 540

Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser
545                 550                 555                 560

Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn
                565                 570                 575

Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala
            580                 585                 590

Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly
        595                 600                 605

Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg
    610                 615                 620

Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly
625                 630                 635                 640

Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala
                645                 650                 655

Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn
            660                 665                 670
```

```
Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys
        675                 680                 685

Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys
    690                 695                 700

Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr
705                 710                 715                 720

Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys
                725                 730                 735

Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr
            740                 745                 750

Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn
        755                 760                 765

Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly
    770                 775                 780

Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala
785                 790                 795                 800

Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn
                805                 810                 815

Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly
            820                 825                 830

Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr
        835                 840                 845

Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn
    850                 855                 860

Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys
865                 870                 875                 880

Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr
                885                 890                 895

Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn
            900                 905                 910

Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys
        915                 920                 925

Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly
    930                 935                 940
```

```
Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr
945                 950                 955                 960


Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly
               965                 970                 975


Gly Asn Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr
           980                 985                 990


His Gly Ala Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
       995                 1000                1005


Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1010                1015                1020


Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1025                1030                1035


Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1040                1045                1050


Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1055                1060                1065


Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1070                1075                1080


Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1085                1090                1095


Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1100                1105                1110


Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1115                1120                1125


Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1130                1135                1140


Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1145                1150                1155


Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1160                1165                1170


Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1175                1180                1185


Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1190                1195                1200
```

```
Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1205                 1210                 1215


Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1220                 1225                 1230


Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1235                 1240                 1245


Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1250                 1255                 1260


Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1265                 1270                 1275


Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1280                 1285                 1290


Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1295                 1300                 1305


Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1310                 1315                 1320


Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1325                 1330                 1335


<210>  604
<211>  1347
<212>  PRT
<213>  Homo Sapiens

<400>  604

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Gly Ala Arg
        35                  40                  45


Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
    50                  55                  60


Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80


Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95


Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr Gly Gly Ala Thr His Met
```

```
            100                 105                 110

Gly Asn Cys Ala Arg Cys Cys Asn Gly Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr His
    130                 135                 140

Gly Gly Asn Met Gly Asn Ala Thr His Thr Ala Tyr Ala Cys Asn Trp
145                 150                 155                 160

Ser Asn Gly Gly Asn Ala Cys Asn Ala Cys Asn Ala Ala Tyr Thr Ala
                165                 170                 175

Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn Met Thr Asn Ala Ala Arg
            180                 185                 190

Trp Ser Asn Met Gly Asn Gly Thr Asn Ala Cys Asn Ala Thr Gly Trp
        195                 200                 205

Ser Asn Gly Thr Asn Gly Ala Tyr Ala Cys Asn Trp Ser Asn Ala Ala
    210                 215                 220

Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Met Thr Asn
225                 230                 235                 240

Ala Ala Arg Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Ala
                245                 250                 255

Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala Tyr Ala Cys Asn Gly Cys
            260                 265                 270

Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn
        275                 280                 285

Met Gly Asn Gly Ala Tyr Gly Gly Asn Thr Ala Tyr Trp Ser Asn Thr
    290                 295                 300

Ala Tyr Gly Gly Asn Cys Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
                325                 330                 335

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala
            340                 345                 350

Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser
        355                 360                 365

Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn
```

```
    370                 375                 380

Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met
385                 390                 395                 400

Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly
                405                 410                 415

Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn
            420                 425                 430

Ala Cys Asn Gly Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr
        435                 440                 445

Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala
    450                 455                 460

Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn
465                 470                 475                 480

Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp
                485                 490                 495

Ser Asn Gly Gly Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser
            500                 505                 510

Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr
        515                 520                 525

Cys Cys Asn Gly Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp
    530                 535                 540

Ser Asn Trp Ser Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser
545                 550                 555                 560

Asn Met Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn
                565                 570                 575

Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala
            580                 585                 590

Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys
        595                 600                 605

Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn
    610                 615                 620

Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala
625                 630                 635                 640

Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala
```

645 650 655

Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg
660 665 670

Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys
675 680 685

Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys
690 695 700

Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn
705 710 715 720

Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys
725 730 735

Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala
740 745 750

Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn
755 760 765

Met Gly Asn Ala Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala
770 775 780

Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala
785 790 795 800

Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr
805 810 815

Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala
820 825 830

Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly
835 840 845

Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr
850 855 860

Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met
865 870 875 880

Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala
885 890 895

Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn
900 905 910

Gly Thr Asn Trp Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly

```
        915                 920                 925

Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly
    930                 935                 940

Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg
945                 950                 955                 960

Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp
                965                 970                 975

Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys Cys
            980                 985                 990

Asn Gly Cys Asn Cys Cys Asn Ala  Thr His Gly Ala Arg  Ala Ala Arg
        995                 1000                1005

Ala Cys  Asn Ala Thr His Trp  Ser Asn Ala Ala Arg  Ala Cys Asn
    1010                1015                1020

Ala Ala  Arg Gly Gly Asn Cys  Ala Arg Cys Cys Asn  Met Gly Asn
    1025                1030                1035

Gly Ala  Arg Cys Cys Asn Cys  Ala Arg Gly Thr Asn  Thr Ala Tyr
    1040                1045                1050

Ala Cys  Asn Met Thr Asn Cys  Cys Asn Cys Cys Asn  Trp Ser Asn
    1055                1060                1065

Met Gly  Asn Gly Ala Arg Gly  Ala Arg Ala Thr Gly  Ala Cys Asn
    1070                1075                1080

Ala Ala  Arg Ala Ala Tyr Cys  Ala Arg Gly Thr Asn  Trp Ser Asn
    1085                1090                1095

Met Thr  Asn Ala Cys Asn Thr  Gly Tyr Met Thr Asn  Gly Thr Asn
    1100                1105                1110

Ala Ala  Arg Gly Gly Asn Thr  Thr Tyr Thr Ala Tyr  Cys Cys Asn
    1115                1120                1125

Trp Ser  Asn Gly Ala Tyr Ala  Thr His Gly Cys Asn  Gly Thr Asn
    1130                1135                1140

Gly Ala  Arg Thr Gly Gly Gly  Ala Arg Trp Ser Asn  Ala Ala Tyr
    1145                1150                1155

Gly Gly  Asn Cys Ala Arg Cys  Cys Asn Gly Ala Arg  Ala Ala Tyr
    1160                1165                1170

Ala Ala  Tyr Thr Ala Tyr Ala  Ala Arg Ala Cys Asn  Ala Cys Asn
```

1175 1180 1185

Cys Cys Asn Cys Cys Asn Ala Thr Gly Met Thr Asn Gly Ala Tyr
1190 1195 1200

Trp Ser Asn Gly Ala Tyr Gly Gly Asn Trp Ser Asn Thr Thr Tyr
1205 1210 1215

Thr Thr Tyr Met Thr Asn Thr Ala Tyr Trp Ser Asn Ala Ala Arg
1220 1225 1230

Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Ala Tyr Ala Ala Arg
1235 1240 1245

Trp Ser Asn Met Gly Asn Thr Gly Gly Cys Ala Arg Cys Ala Arg
1250 1255 1260

Gly Gly Asn Ala Ala Tyr Gly Thr Asn Thr Thr Tyr Trp Ser Asn
1265 1270 1275

Thr Gly Tyr Trp Ser Asn Gly Thr Asn Ala Thr Gly Cys Ala Tyr
1280 1285 1290

Gly Ala Arg Gly Cys Asn Met Thr Asn Cys Ala Tyr Ala Ala Tyr
1295 1300 1305

Cys Ala Tyr Thr Ala Tyr Ala Cys Asn Cys Ala Arg Ala Ala Arg
1310 1315 1320

Trp Ser Asn Met Thr Asn Trp Ser Asn Met Thr Asn Trp Ser Asn
1325 1330 1335

Cys Cys Asn Gly Gly Asn Ala Ala Arg
1340 1345

<210> 605
<211> 1356
<212> PRT
<213> Homo Sapiens

<400> 605

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Gly Ala Arg
35 40 45

Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
50 55 60

```
Gly Tyr Ala Cys Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Trp Ser Asn Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Met Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Ala Cys
                165                 170                 175

Asn Ala Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Met Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Ala
        195                 200                 205

Cys Asn Ala Thr His Trp Ser Asn Ala Thr His Gly Thr Asn Ala Cys
    210                 215                 220

Asn Trp Ser Asn Met Gly Asn Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Met Thr Asn Ala Ala Arg Met Thr Asn Trp Ser Asn Trp
                245                 250                 255

Ser Asn Gly Thr Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Trp Ser Asn Gly Cys Asn Met
    290                 295                 300

Thr Asn Met Gly Asn Thr Ala Tyr Thr Thr Tyr Gly Ala Tyr Thr Gly
305                 310                 315                 320

Gly Met Thr Asn Thr Thr Tyr Trp Ser Asn Gly Ala Tyr Gly Thr Asn
                325                 330                 335
```

```
Trp Ser Asn Gly Ala Tyr Ala Thr His Thr Gly Gly Gly Gly Asn Cys
            340                 345                 350

Ala Arg Gly Gly Asn Ala Cys Asn Ala Thr Gly Gly Thr Asn Ala Cys
        355                 360                 365

Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn
    370                 375                 380

Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly
385                 390                 395                 400

Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys
                405                 410                 415

Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn
            420                 425                 430

Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly
        435                 440                 445

Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr
    450                 455                 460

Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn
465                 470                 475                 480

Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp
                485                 490                 495

Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys
            500                 505                 510

Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn
        515                 520                 525

Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly
    530                 535                 540

Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly
545                 550                 555                 560

Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn
                565                 570                 575

Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys
            580                 585                 590

Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly
        595                 600                 605
```

```
Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn
    610                 615                 620

Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala
625                 630                 635                 640

Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala
                645                 650                 655

Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn
            660                 665                 670

Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly
        675                 680                 685

Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly
    690                 695                 700

Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn
705                 710                 715                 720

Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr
                725                 730                 735

Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala
            740                 745                 750

Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn
        755                 760                 765

Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys
    770                 775                 780

Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr
785                 790                 795                 800

Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn
                805                 810                 815

Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly
            820                 825                 830

Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala
        835                 840                 845

Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg
    850                 855                 860

Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala
865                 870                 875                 880
```

```
Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala
                885                 890                 895

Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn
            900                 905                 910

Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly
        915                 920                 925

Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala
    930                 935                 940

Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr
945                 950                 955                 960

Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr
                965                 970                 975

Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala
            980                 985                 990

Arg Gly Gly Asn Met Thr Asn Cys  Cys Asn Gly Cys Asn  Cys Cys Asn
        995                 1000                1005

Ala Thr  His Gly Ala Arg Ala  Ala Arg Ala Cys Asn  Ala Thr His
    1010                1015                1020

Trp Ser  Asn Ala Ala Arg Ala  Cys Asn Ala Ala Arg  Gly Gly Asn
    1025                1030                1035

Cys Ala  Arg Cys Cys Asn Met  Gly Asn Gly Ala Arg  Cys Cys Asn
    1040                1045                1050

Cys Ala  Arg Gly Thr Asn Thr  Ala Tyr Ala Cys Asn  Met Thr Asn
    1055                1060                1065

Cys Cys  Asn Cys Cys Asn Trp  Ser Asn Met Gly Asn  Gly Ala Arg
    1070                1075                1080

Gly Ala  Arg Ala Thr Gly Ala  Cys Asn Ala Ala Arg  Ala Ala Tyr
    1085                1090                1095

Cys Ala  Arg Gly Thr Asn Trp  Ser Asn Met Thr Asn  Ala Cys Asn
    1100                1105                1110

Thr Gly  Tyr Met Thr Asn Gly  Thr Asn Ala Ala Arg  Gly Gly Asn
    1115                1120                1125

Thr Thr  Tyr Thr Ala Tyr Cys  Cys Asn Trp Ser Asn  Gly Ala Tyr
    1130                1135                1140
```

```
Ala Thr  His Gly Cys Asn Gly  Thr Asn Gly Ala Arg  Thr Gly Gly
    1145                1150                1155


Gly Ala  Arg Trp Ser Asn Ala  Ala Tyr Gly Gly Asn  Cys Ala Arg
    1160                1165                1170


Cys Cys  Asn Gly Ala Arg Ala  Ala Tyr Ala Ala Tyr  Thr Ala Tyr
    1175                1180                1185


Ala Ala  Arg Ala Cys Asn Ala  Cys Asn Cys Cys Asn  Cys Cys Asn
    1190                1195                1200


Ala Thr  Gly Met Thr Asn Gly  Ala Tyr Trp Ser Asn  Gly Ala Tyr
    1205                1210                1215


Gly Gly  Asn Trp Ser Asn Thr  Thr Tyr Thr Thr Tyr  Met Thr Asn
    1220                1225                1230


Thr Ala  Tyr Trp Ser Asn Ala  Ala Arg Met Thr Asn  Ala Cys Asn
    1235                1240                1245


Gly Thr  Asn Gly Ala Tyr Ala  Ala Arg Trp Ser Asn  Met Gly Asn
    1250                1255                1260


Thr Gly  Gly Cys Ala Arg Cys  Ala Arg Gly Gly Asn  Ala Ala Tyr
    1265                1270                1275


Gly Thr  Asn Thr Thr Tyr Trp  Ser Asn Thr Gly Tyr  Trp Ser Asn
    1280                1285                1290


Gly Thr  Asn Ala Thr Gly Cys  Ala Tyr Gly Ala Arg  Gly Cys Asn
    1295                1300                1305


Met Thr  Asn Cys Ala Tyr Ala  Ala Tyr Cys Ala Tyr  Thr Ala Tyr
    1310                1315                1320


Ala Cys  Asn Cys Ala Arg Ala  Ala Arg Trp Ser Asn  Met Thr Asn
    1325                1330                1335


Trp Ser  Asn Met Thr Asn Trp  Ser Asn Cys Cys Asn  Gly Gly Asn
    1340                1345                1350


Ala Ala  Arg
    1355


<210>  606
<211>  1338
<212>  PRT
<213>  Homo Sapiens

<400>  606
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Gly Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Met Thr
            20                  25                  30

Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Ala Arg
        35                  40                  45

Trp Ser Asn Met Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Ala Ala Arg Gly Gly Asn Trp Ser Asn Gly Gly Asn Thr Ala
65                  70                  75                  80

Tyr Met Gly Asn Thr Thr Tyr Ala Cys Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Ala Thr Gly Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140

Gly Gly Asn Ala Thr His Ala Thr His Thr Ala Tyr Cys Cys Asn Gly
145                 150                 155                 160

Ala Tyr Gly Ala Tyr Trp Ser Asn Gly Ala Tyr Ala Cys Asn Met Gly
                165                 170                 175

Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn Thr Thr Tyr
            180                 185                 190

Cys Ala Arg Gly Gly Asn Cys Ala Arg Gly Thr Asn Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Gly Cys Asn Gly Ala Tyr Ala Ala Arg Trp Ser
    210                 215                 220

Asn Ala Thr His Trp Ser Asn Ala Cys Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Thr Gly Gly Trp Ser Asn Trp Ser Asn Met
                245                 250                 255

Thr Asn Ala Ala Arg Gly Cys Asn Trp Ser Asn Gly Ala Tyr Ala Cys
            260                 265                 270
```

```
Asn Gly Cys Asn Ala Thr Gly Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Cys Ala Arg Ala Ala Arg Trp Ser Asn Thr
    290                 295                 300

Ala Tyr Gly Gly Asn Thr Ala Tyr Trp Ser Asn Thr Ala Tyr Thr Thr
305                 310                 315                 320

Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg
                325                 330                 335

Gly Gly Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala Cys Asn Gly
            340                 345                 350

Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys
        355                 360                 365

Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn
    370                 375                 380

Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr
385                 390                 395                 400

Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser
                405                 410                 415

Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn
            420                 425                 430

Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala
        435                 440                 445

Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala
    450                 455                 460

Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn
465                 470                 475                 480

Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met
                485                 490                 495

Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala
            500                 505                 510

Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn
        515                 520                 525

Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met
    530                 535                 540
```

```
Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser
545                 550                 555                 560

Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn
                565                 570                 575

Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala
            580                 585                 590

Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly
        595                 600                 605

Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg
    610                 615                 620

Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly
625                 630                 635                 640

Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala
                645                 650                 655

Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn
            660                 665                 670

Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys
        675                 680                 685

Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys
    690                 695                 700

Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr
705                 710                 715                 720

Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys
                725                 730                 735

Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr
            740                 745                 750

Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn
        755                 760                 765

Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly
    770                 775                 780

Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala
785                 790                 795                 800

Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn
                805                 810                 815
```

```
Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly
            820                 825                 830

Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr
        835                 840                 845

Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn
    850                 855                 860

Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys
865                 870                 875                 880

Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr
                885                 890                 895

Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn
            900                 905                 910

Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys
        915                 920                 925

Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly
    930                 935                 940

Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr
945                 950                 955                 960

Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly
                965                 970                 975

Gly Asn Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys Asn Ala Thr
            980                 985                 990

His Gly Ala Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
        995                 1000                1005

Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1010                1015                1020

Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1025                1030                1035

Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1040                1045                1050

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1055                1060                1065

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1070                1075                1080
```

```
Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1085                1090                1095

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1100                1105                1110

Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1115                1120                1125

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1130                1135                1140

Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1145                1150                1155

Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1160                1165                1170

Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1175                1180                1185

Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1190                1195                1200

Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1205                1210                1215

Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1220                1225                1230

Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1235                1240                1245

Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1250                1255                1260

Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1265                1270                1275

Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1280                1285                1290

Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1295                1300                1305

Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1310                1315                1320

Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1325                1330                1335
```

<210> 607
<211> 1341
<212> PRT
<213> Homo Sapiens

<400> 607

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Gly Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Cys
1               5                  10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30

Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Ala Arg
        35                  40                  45

Trp Ser Asn Met Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Ala Ala Arg Gly Gly Asn Trp Ser Asn Gly Gly Asn Thr Ala
65                  70                  75                  80

Tyr Trp Ser Asn Thr Thr Tyr Ala Cys Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Ala Thr Gly Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140

Gly Gly Asn Ala Thr His Ala Thr His Thr Ala Tyr Cys Cys Asn Gly
145                 150                 155                 160

Ala Tyr Gly Ala Tyr Trp Ser Asn Gly Ala Tyr Gly Cys Asn Met Gly
                165                 170                 175

Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn Thr Thr Tyr
            180                 185                 190

Cys Ala Arg Gly Gly Asn Cys Ala Arg Gly Thr Asn Ala Cys Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Gly Cys Asn Gly Ala Tyr Ala Ala Arg Trp Ser
    210                 215                 220

Asn Ala Thr His Ala Ala Tyr Ala Cys Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240
```

```
Met Thr Asn Cys Ala Arg Thr Gly Gly Trp Ser Asn Trp Ser Asn Met
                245                 250                 255

Thr Asn Ala Ala Arg Gly Cys Asn Trp Ser Asn Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Ala Thr Gly Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Cys Ala Arg Gly Gly Asn Thr Ala Tyr Gly
    290                 295                 300

Gly Asn Trp Ser Asn Gly Gly Asn Thr Gly Gly Gly Gly Asn Thr Ala
305                 310                 315                 320

Tyr Thr Thr Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn
                325                 330                 335

Cys Ala Arg Gly Gly Asn Ala Cys Asn Met Thr Asn Gly Thr Asn Ala
            340                 345                 350

Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser
        355                 360                 365

Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn
    370                 375                 380

Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys
385                 390                 395                 400

Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys
                405                 410                 415

Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn
            420                 425                 430

Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly
        435                 440                 445

Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys
    450                 455                 460

Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn
465                 470                 475                 480

Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly
                485                 490                 495

Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr
            500                 505                 510
```

```
Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn
        515                 520                 525

Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly
    530                 535                 540

Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser
545                 550                 555                 560

Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn
                565                 570                 575

Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly
            580                 585                 590

Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys
        595                 600                 605

Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr
    610                 615                 620

Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala
625                 630                 635                 640

Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr
                645                 650                 655

Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr
            660                 665                 670

Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr
        675                 680                 685

Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr
    690                 695                 700

Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn
705                 710                 715                 720

Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala
                725                 730                 735

Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr
            740                 745                 750

Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn
        755                 760                 765

Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly
    770                 775                 780
```

```
Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser
785                 790                 795                 800


Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg
                805                 810                 815


Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr
            820                 825                 830


Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala
        835                 840                 845


Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg
    850                 855                 860


Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly
865                 870                 875                 880


Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys
                885                 890                 895


Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn
            900                 905                 910


Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys
        915                 920                 925


Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala
    930                 935                 940


Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg
945                 950                 955                 960


Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala
                965                 970                 975


Ala Arg Gly Gly Asn Met Thr Asn Cys Cys Asn Gly Cys Asn Cys Cys
            980                 985                 990


Asn Ala Thr His Gly Ala Arg Ala  Ala Arg Ala Cys Asn  Ala Thr His
        995                 1000                1005


Trp Ser  Asn Ala Ala Arg Ala  Cys Asn Ala Ala Arg  Gly Gly Asn
    1010                1015                1020


Cys Ala  Arg Cys Cys Asn Met  Gly Asn Gly Ala Arg  Cys Cys Asn
    1025                1030                1035


Cys Ala  Arg Gly Thr Asn Thr  Ala Tyr Ala Cys Asn  Met Thr Asn
    1040                1045                1050
```

```
Cys Cys  Asn Cys Cys Asn Trp  Ser Asn Met Gly Asn  Gly Ala Arg
    1055                 1060                 1065

Gly Ala  Arg Ala Thr Gly Ala  Cys Asn Ala Ala Arg  Ala Ala Tyr
    1070                 1075                 1080

Cys Ala  Arg Gly Thr Asn Trp  Ser Asn Met Thr Asn  Ala Cys Asn
    1085                 1090                 1095

Thr Gly  Tyr Met Thr Asn Gly  Thr Asn Ala Ala Arg  Gly Gly Asn
    1100                 1105                 1110

Thr Thr  Tyr Thr Ala Tyr Cys  Cys Asn Trp Ser Asn  Gly Ala Tyr
    1115                 1120                 1125

Ala Thr  His Gly Cys Asn Gly  Thr Asn Gly Ala Arg  Thr Gly Gly
    1130                 1135                 1140

Gly Ala  Arg Trp Ser Asn Ala  Ala Tyr Gly Gly Asn  Cys Ala Arg
    1145                 1150                 1155

Cys Cys  Asn Gly Ala Arg Ala  Ala Tyr Ala Ala Tyr  Thr Ala Tyr
    1160                 1165                 1170

Ala Ala  Arg Ala Cys Asn Ala  Cys Asn Cys Cys Asn  Cys Cys Asn
    1175                 1180                 1185

Ala Thr  Gly Met Thr Asn Gly  Ala Tyr Trp Ser Asn  Gly Ala Tyr
    1190                 1195                 1200

Gly Gly  Asn Trp Ser Asn Thr  Thr Tyr Thr Thr Tyr  Met Thr Asn
    1205                 1210                 1215

Thr Ala  Tyr Trp Ser Asn Ala  Ala Arg Met Thr Asn  Ala Cys Asn
    1220                 1225                 1230

Gly Thr  Asn Gly Ala Tyr Ala  Ala Arg Trp Ser Asn  Met Gly Asn
    1235                 1240                 1245

Thr Gly  Gly Cys Ala Arg Cys  Ala Arg Gly Gly Asn  Ala Ala Tyr
    1250                 1255                 1260

Gly Thr  Asn Thr Thr Tyr Trp  Ser Asn Thr Gly Tyr  Trp Ser Asn
    1265                 1270                 1275

Gly Thr  Asn Ala Thr Gly Cys  Ala Tyr Gly Ala Arg  Gly Cys Asn
    1280                 1285                 1290

Met Thr  Asn Cys Ala Tyr Ala  Ala Tyr Cys Ala Tyr  Thr Ala Tyr
    1295                 1300                 1305
```

```
Ala Cys  Asn Cys Ala Arg Ala  Ala Arg Trp Ser Asn  Met Thr Asn
    1310                1315                1320


Trp Ser  Asn Met Thr Asn Trp  Ser Asn Cys Cys Asn  Gly Gly Asn
    1325                1330                1335


Ala Ala  Arg
    1340


<210>  608
<211>  1359
<212>  PRT
<213>  Homo Sapiens

<400>  608

Gly Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Gly Thr Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30


Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Ala Arg
        35                  40                  45


Trp Ser Asn Met Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Ala Ala Arg Gly Gly Asn Trp Ser Asn Gly Gly Asn Thr Ala
65                  70                  75                  80


Tyr Trp Ser Asn Thr Thr Tyr Ala Cys Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95


Thr Gly Gly Ala Thr His Gly Gly Asn Thr Gly Gly Gly Thr Asn Met
            100                 105                 110


Gly Asn Cys Ala Arg Ala Thr Gly Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125


Arg Gly Gly Asn Met Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140


Gly Gly Asn Ala Thr His Ala Thr His Thr Ala Tyr Cys Cys Asn Gly
145                 150                 155                 160


Gly Asn Gly Ala Tyr Trp Ser Asn Gly Ala Tyr Ala Thr His Met Gly
                165                 170                 175


Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn Thr Thr Tyr
            180                 185                 190


Cys Ala Arg Gly Gly Asn Cys Ala Arg Gly Thr Asn Ala Cys Asn Ala
```

```
        195                 200                 205

Thr His Trp Ser Asn Gly Cys Asn Gly Ala Tyr Ala Ala Arg Trp Ser
    210                 215                 220

Asn Ala Thr His Trp Ser Asn Ala Cys Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240

Met Thr Asn Cys Ala Arg Thr Gly Gly Trp Ser Asn Trp Ser Asn Met
                245                 250                 255

Thr Asn Ala Ala Arg Gly Cys Asn Trp Ser Asn Gly Ala Tyr Ala Cys
            260                 265                 270

Asn Gly Cys Asn Ala Thr Gly Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Cys Ala Arg Gly Gly Asn Met Thr Asn Gly
    290                 295                 300

Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Ala Cys Asn Trp Ser
305                 310                 315                 320

Asn Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr
                325                 330                 335

Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly
            340                 345                 350

Gly Asn Cys Ala Arg Gly Gly Asn Ala Cys Asn Ala Cys Asn Gly Thr
        355                 360                 365

Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn
    370                 375                 380

Trp Ser Asn Ala Cys Asn Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp
385                 390                 395                 400

Ser Asn Gly Thr Asn Thr Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys
                405                 410                 415

Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn
            420                 425                 430

Ala Cys Asn Trp Ser Asn Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly
        435                 440                 445

Cys Asn Gly Cys Asn Met Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr
    450                 455                 460

Asn Gly Thr Asn Ala Ala Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr
```

```
465                 470                 475                 480

Cys Cys Asn Gly Ala Arg Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly
                485                 490                 495

Thr Asn Trp Ser Asn Thr Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly
            500                 505                 510

Asn Gly Cys Asn Met Thr Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn
        515                 520                 525

Gly Thr Asn Cys Ala Tyr Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly
    530                 535                 540

Cys Asn Gly Thr Asn Met Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser
545                 550                 555                 560

Asn Gly Gly Asn Met Thr Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn
                565                 570                 575

Trp Ser Asn Trp Ser Asn Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly
            580                 585                 590

Thr Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr
        595                 600                 605

Tyr Gly Gly Asn Ala Cys Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr
    610                 615                 620

Ala Cys Asn Thr Gly Tyr Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys
625                 630                 635                 640

Ala Tyr Ala Ala Arg Cys Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys
                645                 650                 655

Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn
            660                 665                 670

Gly Thr Asn Gly Ala Arg Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr
        675                 680                 685

Gly Tyr Gly Thr Asn Gly Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys
    690                 695                 700

Asn Thr Gly Tyr Cys Cys Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn
705                 710                 715                 720

Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly
                725                 730                 735

Thr Asn Thr Thr Tyr Met Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys
```

740 745 750

Asn Ala Ala Arg Cys Cys Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn
755 760 765

Met Thr Asn Ala Thr Gly Ala Thr His Trp Ser Asn Met Gly Asn Ala
770 775 780

Cys Asn Cys Cys Asn Gly Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly
785 790 795 800

Tyr Gly Thr Asn Gly Thr Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn
805 810 815

Trp Ser Asn Cys Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly
820 825 830

Ala Arg Gly Thr Asn Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly
835 840 845

Gly Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn
850 855 860

Gly Ala Arg Gly Thr Asn Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala
865 870 875 880

Ala Arg Ala Cys Asn Ala Ala Arg Cys Cys Asn Met Gly Asn Gly Ala
885 890 895

Arg Gly Ala Arg Cys Ala Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn
900 905 910

Ala Cys Asn Thr Thr Tyr Met Gly Asn Gly Thr Asn Gly Thr Asn Trp
915 920 925

Ser Asn Gly Thr Asn Met Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr
930 935 940

Asn Cys Ala Tyr Cys Ala Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn
945 950 955 960

Ala Ala Tyr Gly Gly Asn Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala
965 970 975

Ala Arg Thr Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala
980 985 990

Tyr Ala Ala Arg Gly Gly Asn Met Thr Asn Cys Cys Asn Gly Cys Asn
995 1000 1005

Cys Cys Asn Ala Thr His Gly Ala Arg Ala Ala Arg Ala Cys Asn

1010 1015 1020

Ala Thr His Trp Ser Asn Ala Ala Arg Ala Cys Asn Ala Ala Arg
1025 1030 1035

Gly Gly Asn Cys Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg
1040 1045 1050

Cys Cys Asn Cys Ala Arg Gly Thr Asn Thr Ala Tyr Ala Cys Asn
1055 1060 1065

Met Thr Asn Cys Cys Asn Cys Cys Asn Trp Ser Asn Met Gly Asn
1070 1075 1080

Gly Ala Arg Gly Ala Arg Ala Thr Gly Ala Cys Asn Ala Ala Arg
1085 1090 1095

Ala Ala Tyr Cys Ala Arg Gly Thr Asn Trp Ser Asn Met Thr Asn
1100 1105 1110

Ala Cys Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala Arg
1115 1120 1125

Gly Gly Asn Thr Thr Tyr Thr Ala Tyr Cys Cys Asn Trp Ser Asn
1130 1135 1140

Gly Ala Tyr Ala Thr His Gly Cys Asn Gly Thr Asn Gly Ala Arg
1145 1150 1155

Thr Gly Gly Gly Ala Arg Trp Ser Asn Ala Ala Tyr Gly Gly Asn
1160 1165 1170

Cys Ala Arg Cys Cys Asn Gly Ala Arg Ala Ala Tyr Ala Ala Tyr
1175 1180 1185

Thr Ala Tyr Ala Ala Arg Ala Cys Asn Ala Cys Asn Cys Cys Asn
1190 1195 1200

Cys Cys Asn Ala Thr Gly Met Thr Asn Gly Ala Tyr Trp Ser Asn
1205 1210 1215

Gly Ala Tyr Gly Gly Asn Trp Ser Asn Thr Thr Tyr Thr Thr Tyr
1220 1225 1230

Met Thr Asn Thr Ala Tyr Trp Ser Asn Ala Ala Arg Met Thr Asn
1235 1240 1245

Ala Cys Asn Gly Thr Asn Gly Ala Tyr Ala Ala Arg Trp Ser Asn
1250 1255 1260

Met Gly Asn Thr Gly Gly Cys Ala Arg Cys Ala Arg Gly Gly Asn

1265 1270 1275

Ala Ala Tyr Gly Thr Asn Thr Thr Tyr Trp Ser Asn Thr Gly Tyr
1280 1285 1290

Trp Ser Asn Gly Thr Asn Ala Thr Gly Cys Ala Tyr Gly Ala Arg
1295 1300 1305

Gly Cys Asn Met Thr Asn Cys Ala Tyr Ala Ala Tyr Cys Ala Tyr
1310 1315 1320

Thr Ala Tyr Ala Cys Asn Cys Ala Arg Ala Ala Arg Trp Ser Asn
1325 1330 1335

Met Thr Asn Trp Ser Asn Met Thr Asn Trp Ser Asn Cys Cys Asn
1340 1345 1350

Gly Gly Asn Ala Ala Arg
1355

<210> 609
<211> 1353
<212> PRT
<213> Homo Sapiens

<400> 609

Cys Ala Arg Gly Thr Asn Cys Ala Arg Met Thr Asn Cys Ala Arg Cys
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Met Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
35 40 45

Ala Cys Asn Met Thr Asn Trp Ser Asn Met Thr Asn Ala Cys Asn Thr
50 55 60

Gly Tyr Gly Cys Asn Ala Thr His Trp Ser Asn Gly Gly Asn Gly Ala
65 70 75 80

Tyr Trp Ser Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Trp Ser Asn Gly Cys Asn Gly Cys Asn Thr Gly Gly Ala Ala Tyr Thr
100 105 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Trp Ser Asn Cys Cys
115 120 125

Asn Trp Ser Asn Met Gly Asn Gly Gly Asn Met Thr Asn Gly Ala Arg
130 135 140

```
Thr Gly Gly Met Thr Asn Gly Gly Asn Met Gly Asn Ala Cys Asn Thr
145                 150                 155                 160

Ala Tyr Thr Gly Tyr Met Gly Asn Trp Ser Asn Ala Ala Arg Thr Gly
                165                 170                 175

Gly Thr Ala Tyr Ala Ala Tyr Gly Ala Tyr Thr Ala Tyr Gly Cys Asn
            180                 185                 190

Gly Thr Asn Trp Ser Asn Gly Thr Asn Ala Ala Arg Trp Ser Asn Met
        195                 200                 205

Gly Asn Ala Thr His Ala Cys Asn Ala Thr His Ala Ala Tyr Cys Cys
    210                 215                 220

Asn Gly Ala Tyr Ala Cys Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr
225                 230                 235                 240

Cys Ala Arg Thr Thr Tyr Trp Ser Asn Met Thr Asn Cys Ala Arg Met
                245                 250                 255

Thr Asn Ala Ala Tyr Trp Ser Asn Gly Thr Asn Ala Cys Asn Cys Cys
            260                 265                 270

Asn Gly Ala Arg Gly Ala Tyr Ala Cys Asn Gly Cys Asn Gly Thr Asn
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly
    290                 295                 300

Ala Tyr Met Gly Asn Gly Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly
305                 310                 315                 320

Asn Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly
                325                 330                 335

Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
            340                 345                 350

Gly Asn Ala Cys Asn Ala Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr
        355                 360                 365

Asn Trp Ser Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala Cys Asn
    370                 375                 380

Ala Ala Arg Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr
385                 390                 395                 400

Thr Tyr Cys Cys Asn Met Thr Asn Gly Cys Asn Cys Cys Asn Thr Gly
                405                 410                 415
```

```
Tyr Trp Ser Asn Met Gly Asn Trp Ser Asn Ala Cys Asn Trp Ser Asn
            420                 425                 430

Gly Ala Arg Trp Ser Asn Ala Cys Asn Gly Cys Asn Gly Cys Asn Met
        435                 440                 445

Thr Asn Gly Gly Asn Thr Gly Tyr Met Thr Asn Gly Thr Asn Ala Ala
    450                 455                 460

Arg Gly Ala Tyr Thr Ala Tyr Thr Thr Tyr Cys Cys Asn Gly Ala Arg
465                 470                 475                 480

Cys Cys Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Trp Ser Asn Thr
                485                 490                 495

Gly Gly Ala Ala Tyr Trp Ser Asn Gly Gly Asn Gly Cys Asn Met Thr
            500                 505                 510

Asn Ala Cys Asn Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Ala Tyr
        515                 520                 525

Ala Cys Asn Thr Thr Tyr Cys Cys Asn Gly Cys Asn Gly Thr Asn Met
    530                 535                 540

Thr Asn Cys Ala Arg Trp Ser Asn Trp Ser Asn Gly Gly Asn Met Thr
545                 550                 555                 560

Asn Thr Ala Tyr Trp Ser Asn Met Thr Asn Trp Ser Asn Trp Ser Asn
                565                 570                 575

Gly Thr Asn Gly Thr Asn Ala Cys Asn Gly Thr Asn Cys Cys Asn Trp
            580                 585                 590

Ser Asn Trp Ser Asn Ala Ala Tyr Thr Thr Tyr Gly Gly Asn Ala Cys
        595                 600                 605

Asn Cys Ala Arg Ala Cys Asn Thr Ala Tyr Ala Cys Asn Thr Gly Tyr
    610                 615                 620

Ala Ala Tyr Gly Thr Asn Gly Ala Tyr Cys Ala Tyr Ala Ala Arg Cys
625                 630                 635                 640

Cys Asn Trp Ser Asn Ala Ala Tyr Ala Cys Asn Ala Ala Arg Gly Thr
                645                 650                 655

Asn Gly Ala Tyr Ala Ala Arg Ala Cys Asn Gly Thr Asn Gly Ala Arg
            660                 665                 670

Met Gly Asn Ala Ala Arg Thr Gly Tyr Thr Gly Tyr Gly Thr Asn Gly
        675                 680                 685
```

```
Ala Arg Thr Gly Tyr Cys Cys Asn Cys Cys Asn Thr Gly Tyr Cys Cys
    690                 695                 700

Asn Gly Cys Asn Cys Cys Asn Cys Cys Asn Gly Thr Asn Gly Cys Asn
705                 710                 715                 720

Gly Gly Asn Cys Cys Asn Trp Ser Asn Gly Thr Asn Thr Thr Tyr Met
                725                 730                 735

Thr Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn Ala Ala Arg Cys Cys
            740                 745                 750

Asn Ala Ala Arg Gly Ala Tyr Ala Cys Asn Met Thr Asn Ala Thr Gly
        755                 760                 765

Ala Thr His Trp Ser Asn Met Gly Asn Ala Cys Asn Cys Cys Asn Gly
    770                 775                 780

Ala Arg Gly Thr Asn Ala Cys Asn Thr Gly Tyr Gly Thr Asn Gly Thr
785                 790                 795                 800

Asn Gly Thr Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Cys Ala Tyr
                805                 810                 815

Gly Ala Arg Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly Thr Asn Cys
            820                 825                 830

Ala Arg Thr Thr Tyr Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Gly Thr
        835                 840                 845

Asn Gly Ala Tyr Gly Gly Asn Gly Thr Asn Gly Ala Arg Gly Thr Asn
    850                 855                 860

Cys Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Cys Asn Ala
865                 870                 875                 880

Ala Arg Cys Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Arg Cys Ala
                885                 890                 895

Arg Thr Thr Tyr Ala Ala Tyr Trp Ser Asn Ala Cys Asn Thr Thr Tyr
            900                 905                 910

Met Gly Asn Gly Thr Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn Met
        915                 920                 925

Thr Asn Ala Cys Asn Gly Thr Asn Gly Thr Asn Cys Ala Tyr Cys Ala
    930                 935                 940

Arg Gly Ala Tyr Thr Gly Gly Met Thr Asn Ala Ala Tyr Gly Gly Asn
945                 950                 955                 960
```

```
Ala Ala Arg Gly Ala Arg Thr Ala Tyr Ala Ala Arg Thr Gly Tyr Ala
               965                 970                 975

Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Gly Gly
           980                 985                 990

Asn Met Thr Asn Cys Cys Asn Gly  Cys Asn Cys Cys Asn  Ala Thr His
       995                 1000                1005

Gly Ala  Arg Ala Ala Arg Ala  Cys Asn Ala Thr His  Trp Ser Asn
    1010                1015                1020

Ala Ala  Arg Ala Cys Asn Ala  Ala Arg Gly Gly Asn  Cys Ala Arg
    1025                1030                1035

Cys Cys  Asn Met Gly Asn Gly  Ala Arg Cys Cys Asn  Cys Ala Arg
    1040                1045                1050

Gly Thr  Asn Thr Ala Tyr Ala  Cys Asn Met Thr Asn  Cys Cys Asn
    1055                1060                1065

Cys Cys  Asn Trp Ser Asn Met  Gly Asn Gly Ala Arg  Gly Ala Arg
    1070                1075                1080

Ala Thr  Gly Ala Cys Asn Ala  Ala Arg Ala Ala Tyr  Cys Ala Arg
    1085                1090                1095

Gly Thr  Asn Trp Ser Asn Met  Thr Asn Ala Cys Asn  Thr Gly Tyr
    1100                1105                1110

Met Thr  Asn Gly Thr Asn Ala  Ala Arg Gly Gly Asn  Thr Thr Tyr
    1115                1120                1125

Thr Ala  Tyr Cys Cys Asn Trp  Ser Asn Gly Ala Tyr  Ala Thr His
    1130                1135                1140

Gly Cys  Asn Gly Thr Asn Gly  Ala Arg Thr Gly Gly  Gly Ala Arg
    1145                1150                1155

Trp Ser  Asn Ala Ala Tyr Gly  Gly Asn Cys Ala Arg  Cys Cys Asn
    1160                1165                1170

Gly Ala  Arg Ala Ala Tyr Ala  Ala Tyr Thr Ala Tyr  Ala Ala Arg
    1175                1180                1185

Ala Cys  Asn Ala Cys Asn Cys  Cys Asn Cys Cys Asn  Ala Thr Gly
    1190                1195                1200

Met Thr  Asn Gly Ala Tyr Trp  Ser Asn Gly Ala Tyr  Gly Gly Asn
    1205                1210                1215
```

```
Trp Ser  Asn Thr Thr Tyr Thr  Thr Tyr Met Thr Asn  Thr Ala Tyr
    1220                 1225                 1230


Trp Ser  Asn Ala Ala Arg Met  Thr Asn Ala Cys Asn  Gly Thr Asn
    1235                 1240                 1245


Gly Ala  Tyr Ala Ala Arg Trp  Ser Asn Met Gly Asn  Thr Gly Gly
    1250                 1255                 1260


Cys Ala  Arg Cys Ala Arg Gly  Gly Asn Ala Ala Tyr  Gly Thr Asn
    1265                 1270                 1275


Thr Thr  Tyr Trp Ser Asn Thr  Gly Tyr Trp Ser Asn  Gly Thr Asn
    1280                 1285                 1290


Ala Thr  Gly Cys Ala Tyr Gly  Ala Arg Gly Cys Asn  Met Thr Asn
    1295                 1300                 1305


Cys Ala  Tyr Ala Ala Tyr Cys  Ala Tyr Thr Ala Tyr  Ala Cys Asn
    1310                 1315                 1320


Cys Ala  Arg Ala Ala Arg Trp  Ser Asn Met Thr Asn  Trp Ser Asn
    1325                 1330                 1335


Met Thr  Asn Trp Ser Asn Cys  Cys Asn Gly Gly Asn  Ala Ala Arg
    1340                 1345                 1350


<210>  610
<211>  336
<212>  PRT
<213>  Homo Sapiens

<400>  610

Gly Ala Tyr Gly Thr Asn Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                  10                  15


Ala Arg Trp Ser Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Tyr Thr
            20                  25                  30


Asn Cys Cys Asn Gly Thr Asn Cys Ala Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45


Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60


Ser Asn Thr Gly Tyr Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80


Arg Trp Ser Asn Tyr Thr Asn Gly Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95
```

```
Gly Ala Tyr Gly Gly Asn Ala Ala Tyr Cys Ala Asn Thr Ala Tyr Tyr
            100                 105                 110

Thr Asn Ala Ala Tyr Thr Gly Gly Thr Thr Tyr Cys Ala Arg Cys Ala
        115                 120                 125

Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Arg Trp Ser Asn
    130                 135                 140

Cys Cys Asn Met Gly Asn Met Gly Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Thr Gly
                165                 170                 175

Gly Gly Ala Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Ala Ala Tyr Gly Gly Asn Trp
        195                 200                 205

Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Trp Ser Asn
        275                 280                 285

Cys Ala Asn Cys Ala Tyr Thr Gly Gly Cys Cys Asn Ala Thr His Cys
    290                 295                 300

Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala
305                 310                 315                 320

Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335
```

<210> 611
<211> 336
<212> PRT
<213> Homo Sapiens

<400> 611

```
Gly Ala Tyr Gly Thr Asn Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Cys Cys Asn Gly Thr Asn Cys Ala Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Tyr Thr Asn Gly Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Gly Ala Tyr Gly Gly Asn Ala Ala Tyr Cys Ala Asn Thr Ala Tyr Tyr
            100                 105                 110

Thr Asn Ala Ala Tyr Thr Gly Gly Thr Thr Tyr Cys Ala Arg Cys Ala
        115                 120                 125

Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Arg Trp Ser Asn
    130                 135                 140

Cys Cys Asn Met Gly Asn Met Gly Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Thr Gly
                165                 170                 175

Gly Gly Ala Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
        195                 200                 205

Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270
```

```
Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr His Cys Ala Arg Gly Gly Asn
        275                 280                 285


Cys Ala Asn Cys Ala Tyr Thr Gly Gly Cys Cys Asn Cys Ala Asn Cys
    290                 295                 300


Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala
305                 310                 315                 320


Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335


<210>  612
<211>  336
<212>  PRT
<213>  Homo Sapiens

<400>  612

Gly Ala Tyr Gly Thr Asn Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Tyr Thr
            20                  25                  30


Asn Cys Cys Asn Gly Thr Asn Cys Ala Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45


Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60


Ser Asn Thr Gly Tyr Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80


Arg Trp Ser Asn Tyr Thr Asn Gly Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95


Gly Ala Tyr Gly Gly Asn Ala Ala Tyr Cys Ala Asn Thr Ala Tyr Tyr
            100                 105                 110


Thr Asn Ala Ala Tyr Thr Gly Gly Tyr Thr Asn Cys Ala Arg Cys Ala
        115                 120                 125


Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Arg Trp Ser Asn
    130                 135                 140


Cys Cys Asn Met Gly Asn Met Gly Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160


Ala Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Thr Gly
                165                 170                 175


Gly Gly Ala Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
```

180 185 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
195 200 205

Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly Ala
210 215 220

Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Ala Ala Arg Ala Thr His
225 230 235 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
245 250 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
260 265 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Gly Gly Asn
275 280 285

Cys Ala Asn Cys Ala Tyr Thr Gly Gly Cys Cys Asn Ala Thr His Cys
290 295 300

Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala
305 310 315 320

Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
325 330 335

<210> 613
<211> 336
<212> PRT
<213> Homo Sapiens

<400> 613

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Cys Ala Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Cys Cys Asn Gly Gly Asn
35 40 45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
50 55 60

Ser Asn Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Trp Ser Asn Tyr Thr Asn Tyr Thr Asn Cys Ala Tyr Trp Ser Asn
85 90 95

```
Gly Ala Tyr Gly Gly Asn Ala Ala Arg Cys Ala Asn Thr Ala Tyr Tyr
            100                 105                 110

Thr Asn Thr Ala Tyr Thr Gly Gly Thr Ala Tyr Tyr Thr Asn Cys Ala
        115                 120                 125

Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn
    130                 135                 140

Cys Cys Asn Cys Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Gly Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Met Gly
                165                 170                 175

Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
        195                 200                 205

Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Gly Gly Asn
        275                 280                 285

Ala Thr His Cys Ala Arg Tyr Thr Asn Cys Cys Asn Thr Gly Tyr Trp
    290                 295                 300

Ser Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala
305                 310                 315                 320

Asn Ala Ala Arg Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335
```

<210> 614
<211> 336
<212> PRT
<213> Homo Sapiens

<400> 614

```
Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                  10                  15

Ala Arg Cys Ala Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Tyr Thr Asn Tyr Thr Asn Cys Ala Tyr Trp Ser Asn
                85                  90                  95

Gly Ala Tyr Gly Gly Asn Ala Ala Arg Cys Ala Asn Thr Ala Tyr Tyr
            100                 105                 110

Thr Asn Thr Ala Tyr Thr Gly Gly Thr Ala Tyr Tyr Thr Asn Cys Ala
        115                 120                 125

Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn
    130                 135                 140

Cys Cys Asn Cys Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Gly Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Met Gly
                165                 170                 175

Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
        195                 200                 205

Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270
```

```
Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Trp Ser Asn
        275                 280                 285


Ala Thr His Cys Ala Arg Tyr Thr Asn Cys Cys Asn Tyr Thr Asn Cys
    290                 295                 300


Ala Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys Ala
305                 310                 315                 320


Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335


<210>  615
<211>  336
<212>  PRT
<213>  Homo Sapiens

<400>  615

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15


Ala Arg Cys Ala Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Tyr Thr
            20                  25                  30


Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45


Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60


Ser Asn Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80


Arg Trp Ser Asn Tyr Thr Asn Tyr Thr Asn Cys Ala Tyr Trp Ser Asn
                85                  90                  95


Gly Ala Tyr Gly Gly Asn Ala Ala Arg Cys Ala Asn Thr Ala Tyr Tyr
            100                 105                 110


Thr Asn Thr Ala Tyr Thr Gly Gly Thr Thr Tyr Tyr Thr Asn Cys Ala
        115                 120                 125


Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn
    130                 135                 140


Cys Cys Asn Cys Ala Arg Cys Cys Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160


Ala Tyr Gly Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Met Gly
                165                 170                 175
```

```
Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
        195                 200                 205

Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Trp Ser Asn
        275                 280                 285

Ala Thr His Cys Ala Arg Tyr Thr Asn Cys Cys Asn Ala Thr His Cys
    290                 295                 300

Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Tyr Gly Gly Asn Cys Ala
305                 310                 315                 320

Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335


<210>  616
<211>  321
<212>  PRT
<213>  Homo Sapiens

<400>  616

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Gly Asn Ala Thr His Gly Cys Asn Ala Ala Tyr Thr Ala Tyr
```

85 90 95

Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Thr
115 120 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Thr Asn Gly Cys Asn Trp Ser Asn Cys Ala Asn Tyr
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
210 215 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Cys Ala Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Ala Ala Tyr Thr Ala
260 265 270

Tyr Ala Ala Tyr Trp Ser Asn Gly Cys Asn Cys Cys Asn Thr Thr Tyr
275 280 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Cys
290 295 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Thr His Ala Ala
305 310 315 320

Arg

<210> 617
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 617

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Ala
50 55 60

Thr His Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Gly Gly Asn Ala Thr His Trp Ser Asn Ala Ala Tyr Gly Ala Tyr
85 90 95

Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Thr
115 120 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Cys Ala Asn Tyr
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
210 215 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Cys Ala Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Ala Ala Arg Thr Ala
260 265 270

```
Tyr Ala Ala Tyr Trp Ser Asn Gly Thr Asn Cys Cys Asn Tyr Thr Asn
        275                 280                 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys
    290                 295                 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 618
<211> 336
<212> PRT
<213> Homo Sapiens

<400> 618

```
Ala Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Cys Ala Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Trp Ser
            20                  25                  30

Asn Cys Cys Asn Gly Thr Asn Cys Ala Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Tyr Thr Asn Gly Thr Asn Cys Ala Tyr Trp Ser Asn
                85                  90                  95

Gly Ala Tyr Gly Gly Asn Ala Ala Tyr Cys Ala Asn Thr Ala Tyr Tyr
            100                 105                 110

Thr Asn Trp Ser Asn Thr Gly Gly Tyr Thr Asn Cys Ala Arg Cys Ala
        115                 120                 125

Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn
    130                 135                 140

Cys Cys Asn Met Gly Asn Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Ala Ala Arg Ala Thr His Trp Ser Asn Ala Ala Tyr Met Gly
                165                 170                 175
```

```
Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp
        195                 200                 205

Ser Asn Gly Gly Asn Gly Cys Asn Gly Gly Asn Cys Ala Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Gly Cys Asn
        275                 280                 285

Cys Ala Asn Cys Ala Arg Thr Thr Tyr Cys Cys Asn Cys Ala Tyr Cys
    290                 295                 300

Ala Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala
305                 310                 315                 320

Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Thr His Ala Ala Arg
                325                 330                 335


<210>  619
<211>  336
<212>  PRT
<213>  Homo Sapiens

<400>  619

Gly Ala Arg Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Cys Ala Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Trp Ser
            20                  25                  30

Asn Cys Cys Asn Gly Thr Asn Cys Ala Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80
```

```
Arg Trp Ser Asn Tyr Thr Asn Gly Thr Asn Cys Ala Tyr Trp Ser Asn
                85                  90                  95

Gly Ala Tyr Gly Gly Asn Ala Ala Tyr Cys Ala Asn Thr Ala Tyr Tyr
            100                 105                 110

Thr Asn Trp Ser Asn Thr Gly Gly Tyr Thr Asn Cys Ala Arg Cys Ala
        115                 120                 125

Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn
    130                 135                 140

Cys Cys Asn Met Gly Asn Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Ala Ala Arg Ala Thr His Trp Ser Asn Ala Ala Tyr Met Gly
                165                 170                 175

Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys Asn
            180                 185                 190

Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Cys
        195                 200                 205

Ala Asn Gly Gly Asn Gly Cys Asn Gly Gly Asn Cys Ala Asn Gly Ala
    210                 215                 220

Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Ala Ala Arg Ala Thr His
225                 230                 235                 240

Trp Ser Asn Met Gly Asn Gly Thr Asn Gly Ala Arg Gly Cys Asn Gly
                245                 250                 255

Ala Arg Gly Ala Tyr Gly Thr Asn Gly Gly Asn Gly Thr Asn Thr Ala
            260                 265                 270

Tyr Thr Ala Tyr Thr Gly Tyr Ala Thr Gly Cys Ala Arg Gly Cys Asn
        275                 280                 285

Cys Ala Asn Cys Ala Arg Thr Thr Tyr Cys Cys Asn Cys Ala Tyr Cys
    290                 295                 300

Ala Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys Ala
305                 310                 315                 320

Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
                325                 330                 335
```

<210> 620
<211> 324
<212> PRT
<213> Homo Sapiens

<400> 620

```
Gly Ala Arg Ala Thr His Gly Thr Asn Tyr Thr Asn Cys Ala Asn Cys
1               5                  10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Gly Asn Cys Ala Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Tyr Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Tyr Thr Asn Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Cys Ala Asn Gly Thr Asn Ala Thr His Trp Ser Asn Trp Ser Asn
                85                  90                  95

Thr Ala Tyr Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys
            100                 105                 110

Ala Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala
        115                 120                 125

Arg Gly Cys Asn Cys Cys Asn Met Gly Asn Tyr Thr Asn Tyr Thr Asn
    130                 135                 140

Ala Thr His Trp Ser Asn Gly Gly Asn Gly Cys Asn Trp Ser Asn Trp
145                 150                 155                 160

Ser Asn Met Gly Asn Gly Cys Asn Cys Ala Asn Gly Gly Asn Ala Thr
                165                 170                 175

His Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn
            180                 185                 190

Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys
        195                 200                 205

Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala
    210                 215                 220

Asn Ala Thr His Trp Ser Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg
225                 230                 235                 240

Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Gly
                245                 250                 255

Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala
```

260 265 270

Arg Thr Ala Tyr Gly Gly Asn Trp Ser Asn Trp Ser Asn Cys Cys Asn
275 280 285

Met Gly Asn Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly
290 295 300

Gly Asn Cys Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr
305 310 315 320

His Ala Ala Arg

<210> 621
<211> 318
<212> PRT
<213> Homo Sapiens

<400> 621

Gly Ala Arg Ala Thr His Gly Thr Asn Tyr Thr Asn Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Gly Asn Cys Ala Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Tyr Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn
35 40 45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Tyr Thr Asn Trp
50 55 60

Ser Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Trp Ser Asn Gly Thr Asn Trp Ser Asn Met Gly Asn Tyr Thr Asn
85 90 95

Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala
100 105 110

Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys
115 120 125

Asn Met Gly Asn Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
130 135 140

Gly Gly Asn Gly Cys Asn Trp Ser Asn Met Gly Asn Met Gly Asn Gly
145 150 155 160

Cys Asn Cys Ala Asn Gly Gly Asn Ala Thr His Cys Cys Asn Gly Ala
165 170 175

```
Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn
            180                 185                 190

Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr
        195                 200                 205

Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser
    210                 215                 220

Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Cys Cys Asn Gly Ala Arg
225                 230                 235                 240

Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr
                245                 250                 255

Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala Tyr Gly Gly
            260                 265                 270

Asn Trp Ser Asn Trp Ser Asn Cys Cys Asn Met Gly Asn Trp Ser Asn
        275                 280                 285

Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Ala
    290                 295                 300

Ala Arg Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
305                 310                 315
```

<210> 622
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 622

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Gly Asn Ala Thr His Met Gly Asn Ala Ala Tyr Gly Ala Tyr
                85                  90                  95
```

```
Tyr Thr Asn Gly Gly Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Met Gly Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Arg Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Tyr Thr Asn Cys Ala Arg Cys Ala
            260                 265                 270

Tyr Ala Ala Tyr Trp Ser Asn Thr Ala Tyr Cys Cys Asn Cys Cys Asn
        275                 280                 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
    290                 295                 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 623
<211> 339
<212> PRT
<213> Homo Sapiens

<400> 623

```
Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
    50                  55                  60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Tyr Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Tyr Thr Asn Gly Thr Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Thr Thr Tyr Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Cys Ala Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270
```

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
275 280 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Thr Thr Tyr Cys Cys Asn Thr
290 295 300

Gly Gly Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305 310 315 320

Asn Cys Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
325 330 335

Ala Ala Arg

<210> 624
<211> 339
<212> PRT
<213> Homo Sapiens

<400> 624

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
20 25 30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
35 40 45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
50 55 60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Trp Ser Asn Gly Thr Asn Tyr Thr Asn Thr Ala Tyr Trp Ser Asn
85 90 95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
100 105 110

Ala Tyr Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
115 120 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
130 135 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala
145 150 155 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Cys Ala

165 170 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
180 185 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
195 200 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala
210 215 220

Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn
225 230 235 240

Ala Thr His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Gly
245 250 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
260 265 270

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
275 280 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Cys Ala Asn Cys Ala Asn Thr
290 295 300

Gly Gly Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305 310 315 320

Asn Cys Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
325 330 335

Ala Ala Arg

<210> 625
<211> 339
<212> PRT
<213> Homo Sapiens

<400> 625

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
20 25 30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
35 40 45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
50 55 60

```
Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Ala Ala Tyr Gly Thr Asn Tyr Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Thr Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Cys Ala Asn Cys Cys Asn Met
    290                 295                 300

Gly Asn Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305                 310                 315                 320

Asn Cys Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335
```

Ala Ala Arg

<210> 626
<211> 339
<212> PRT
<213> Homo Sapiens

<400> 626

```
Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
    50                  55                  60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Ala Ala Tyr Gly Thr Asn Tyr Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala
    210                 215                 220
```

```
Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn
225                 230                 235                 240


Ala Thr His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Gly
                245                 250                 255


Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270


Asn Thr Ala Tyr Thr Thr Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285


Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Cys Ala Asn Cys Cys Asn Met
    290                 295                 300


Gly Asn Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305                 310                 315                 320


Asn Cys Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335


Ala Ala Arg



<210>  627
<211>  339
<212>  PRT
<213>  Homo Sapiens

<400>  627

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
            20                  25                  30


Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45


Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
    50                  55                  60


Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80


Arg Trp Ser Asn Gly Thr Asn Tyr Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95


Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110
```

```
Ala Tyr Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125


Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140


Cys Cys Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala
145                 150                 155                 160


Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Cys Ala
                165                 170                 175


Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190


Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Gly Gly Asn Gly
        195                 200                 205


Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala
    210                 215                 220


Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn
225                 230                 235                 240


Ala Thr His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Gly
                245                 250                 255


Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270


Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285


Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Ala Thr His Trp Ser Asn Met
    290                 295                 300


Gly Asn Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305                 310                 315                 320


Asn Cys Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335


Ala Ala Arg



<210>  628
<211>  339
<212>  PRT
<213>  Homo Sapiens

<400>  628

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
```

```
1               5                  10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
    50                  55                  60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Tyr Thr Asn Thr Ala Tyr Ala Ala Tyr
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Tyr Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
```

275 280 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Cys Ala Asn Cys Ala Asn Thr
290 295 300

Gly Gly Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly
305 310 315 320

Asn Cys Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
325 330 335

Ala Ala Arg

<210> 629
<211> 339
<212> PRT
<213> Homo Sapiens

<400> 629

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
20 25 30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
35 40 45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
50 55 60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Trp Ser Asn Gly Thr Asn Tyr Thr Asn Thr Ala Tyr Ala Ala Tyr
85 90 95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
100 105 110

Ala Tyr Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
115 120 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
130 135 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala
145 150 155 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Cys Ala
165 170 175

```
Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Tyr Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Cys Ala Asn Cys Ala Asn Thr
    290                 295                 300

Gly Gly Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly
305                 310                 315                 320

Asn Cys Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335

Ala Ala Arg
```

<210> 630
<211> 339
<212> PRT
<213> Homo Sapiens

<400> 630

```
Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
    50                  55                  60
```

```
Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Tyr Thr Asn Thr Ala Tyr Trp Ser Asn
                85                  90                  95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110

Ala Tyr Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
        115                 120                 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
    130                 135                 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Gly Thr Asn Tyr Thr Asn Ala
145                 150                 155                 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Met Gly Asn Ala Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
            180                 185                 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
        195                 200                 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala
    210                 215                 220

Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn
225                 230                 235                 240

Ala Thr His Trp Ser Asn Gly Gly Asn Tyr Thr Asn Cys Ala Arg Gly
                245                 250                 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Tyr Thr
            260                 265                 270

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Cys Ala Asn Ala Thr Gly Thr
    290                 295                 300

Thr Tyr Trp Ser Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly
305                 310                 315                 320

Asn Cys Ala Asn Ala Ala Arg Tyr Thr Asn Gly Ala Arg Ala Thr His
                325                 330                 335
```

Ala Ala Arg

<210> 631
<211> 339
<212> PRT
<213> Homo Sapiens

<400> 631

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
20 25 30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
35 40 45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
50 55 60

Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Trp Ser Asn Gly Thr Asn Tyr Thr Asn Gly Ala Tyr Trp Ser Asn
85 90 95

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
100 105 110

Ala Tyr Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
115 120 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
130 135 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala
145 150 155 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Cys Ala
165 170 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
180 185 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
195 200 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala
210 215 220

```
Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn
225                 230                 235                 240


Ala Thr His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Gly
                245                 250                 255


Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
            260                 265                 270


Asn Thr Thr Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Tyr Cys Ala Arg
        275                 280                 285


Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Cys Ala Asn Cys Cys Asn Tyr
    290                 295                 300


Thr Asn Cys Ala Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly
305                 310                 315                 320


Asn Cys Ala Asn Ala Ala Arg Gly Thr Asn Gly Cys Asn Ala Thr His
                325                 330                 335


Ala Ala Arg



<210>  632
<211>  339
<212>  PRT
<213>  Homo Sapiens

<400>  632

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
            20                  25                  30


Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45


Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
    50                  55                  60


Ala Tyr Thr Gly Tyr Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala
65                  70                  75                  80


Arg Trp Ser Asn Ala Thr His Tyr Thr Asn Thr Ala Tyr Met Gly Asn
                85                  90                  95


Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr
            100                 105                 110


Ala Tyr Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala
```

115 120 125

Arg Cys Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Cys Ala Arg
130 135 140

Cys Cys Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala
145 150 155 160

Thr His Thr Ala Tyr Thr Gly Gly Gly Cys Asn Trp Ser Asn Gly Cys
165 170 175

Asn Met Gly Asn Gly Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn
180 185 190

Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly
195 200 205

Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala
210 215 220

Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn
225 230 235 240

Ala Thr His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Gly
245 250 255

Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr Asn Gly Cys Asn Gly Thr
260 265 270

Asn Thr Ala Tyr Thr Thr Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg
275 280 285

Thr Ala Tyr Thr Thr Tyr Ala Thr His Cys Ala Asn Cys Cys Asn Tyr
290 295 300

Thr Asn Cys Ala Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly
305 310 315 320

Asn Cys Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His
325 330 335

Ala Ala Arg

<210> 633
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 633

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

```
Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Cys Ala Tyr Thr Ala Tyr
                85                  90                  95

Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Thr Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Trp Ser Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Ala Ala Arg Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270

Tyr Ala Ala Tyr Ala Ala Tyr Thr Ala Tyr Cys Cys Asn Thr Thr Tyr
        275                 280                 285
```

```
Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Cys
    290                 295                 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 634
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 634

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Gly Cys Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Thr Ala Tyr
                85                  90                  95

Tyr Thr Asn Gly Cys Asn Thr Gly Gly Tyr Thr Asn Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Trp Ser Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190
```

```
Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270

Tyr Ala Ala Tyr Cys Ala Asn Thr Ala Tyr Cys Cys Asn Thr Thr Tyr
        275                 280                 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Cys
    290                 295                 300

Ala Asn Ala Ala Arg Ala Thr Gly Gly Ala Tyr Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 635
<211> 324
<212> PRT
<213> Homo Sapiens

<400> 635

```
Gly Ala Arg Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Cys Asn Cys Ala Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Tyr Thr Asn Trp
    50                  55                  60

Ser Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr
                85                  90                  95
```

```
Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Gly Ala Tyr Cys Cys Asn Gly Gly Asn Cys Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Met Gly Asn Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Gly Asn Gly Cys Asn Trp Ser Asn Met Gly Asn Met
145                 150                 155                 160

Gly Asn Gly Cys Asn Cys Ala Asn Gly Gly Asn Ala Thr His Cys Cys
                165                 170                 175

Asn Gly Cys Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Arg Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Trp Ser Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Gly Thr Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Cys Ala
            260                 265                 270

Tyr Ala Ala Tyr Ala Ala Tyr Thr Gly Gly Cys Cys Asn Cys Cys Asn
        275                 280                 285

Thr Gly Gly Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly
    290                 295                 300

Gly Asn Cys Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr
305                 310                 315                 320

His Ala Ala Arg


<210>  636
<211>  321
<212>  PRT
<213>  Homo Sapiens

<400>  636

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
```

```
1               5                  10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Gly Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Met Gly Asn Thr Gly Gly
                85                  90                  95

Tyr Thr Asn Gly Cys Asn Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Gly Cys
            260                 265                 270

Asn Ala Ala Tyr Trp Ser Asn Thr Thr Tyr Cys Cys Asn Cys Cys Asn
```

275 280 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
290 295 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Thr Thr Tyr Ala Ala
305 310 315 320

Arg

<210> 637
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 637

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Cys Ala Asn Thr Ala Tyr
85 90 95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Thr Thr Tyr Tyr Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

```
Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Gly Cys Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Cys Ala Tyr Trp Ser Asn Gly Cys Asn Cys Cys Asn Thr Thr Tyr
        275                 280                 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Cys
    290                 295                 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 638
<211> 318
<212> PRT
<213> Homo Sapiens

<400> 638

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Cys Ala Asn Ala Thr His Trp Ser Asn Ala Thr His Thr Ala Tyr
                85                  90                  95
```

```
Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Ala Tyr Trp Ser Asn Cys Ala Asn Tyr Thr Asn Cys Ala Asn
        275                 280                 285

Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys Ala Asn Ala
    290                 295                 300

Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
305                 310                 315


<210>  639
<211>  321
<212>  PRT
<213>  Homo Sapiens

<400>  639

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15
```

```
Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Ala Thr His Met Gly Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Met Gly Asn Cys Cys Asn Gly Gly Asn Ala Ala Tyr Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Met Gly Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Ala Tyr Trp Ser Asn Ala Thr His Cys Cys Asn Tyr Thr Asn
        275                 280                 285
```

```
Cys Ala Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys
    290                 295                 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 640
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 640

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Gly
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Cys Ala Asn Ala Thr His Trp Ser Asn Met Gly Asn Thr Ala Tyr
                85                  90                  95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Cys Ala Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
```

195 200 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr
210 215 220

Asn Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Ala Thr
260 265 270

His Thr Ala Tyr Trp Ser Asn Cys Ala Asn Trp Ser Asn Ala Thr His
275 280 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
290 295 300

Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305 310 315 320

Arg

<210> 641
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 641

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Met Gly Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

```
Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Gly Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Cys Asn Gly Ala Arg Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Ala Tyr Ala Thr His Cys Ala Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
    290                 295                 300

Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Thr
305                 310                 315                 320

His
```

<210> 642
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 642

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15
```

```
Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Met Gly Asn Thr Ala Tyr
                85                  90                  95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Cys Ala Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Ala Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Ala Tyr Thr Thr Tyr Cys Ala Asn Cys Cys Asn Ala Thr His
        275                 280                 285
```

```
Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
    290                 295                 300

Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 643
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 643

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Cys Ala Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190
```

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Thr Thr
210 215 220

Tyr Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
260 265 270

Asn Thr Ala Tyr Thr Thr Tyr Trp Ser Asn Cys Cys Asn Ala Thr His
275 280 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
290 295 300

Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305 310 315 320

Arg

<210> 644
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 644

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys

100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Cys Ala Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145 150 155 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr
210 215 220

Asn Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Trp Ser Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
260 265 270

Asn Thr Thr Tyr Thr Ala Tyr Cys Ala Asn Cys Cys Asn Ala Thr His
275 280 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
290 295 300

Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305 310 315 320

Arg

<210> 645
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 645

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

```
Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Ala Tyr Thr Thr Tyr Cys Ala Asn Cys Cys Asn Ala Thr His
        275                 280                 285
```

```
Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
    290                 295                 300

Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 646
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 646

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Cys Ala Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190
```

```
Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Trp Ser Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Thr Tyr Thr Ala Tyr Gly Cys Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
    290                 295                 300

Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 647
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 647

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95
```

```
Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Cys Ala Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr
145                 150                 155                 160

Thr Asn Cys Ala Arg Trp Ser Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Thr Thr Tyr Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Trp Ser
            260                 265                 270

Asn Thr Ala Tyr Thr Thr Tyr Cys Ala Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
    290                 295                 300

Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 648
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 648

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
```

```
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Thr Ala Tyr
                85                  90                  95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Tyr
145                 150                 155                 160

Thr Asn Gly Ala Arg Cys Ala Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270

Tyr Gly Ala Tyr Thr Ala Tyr Tyr Thr Asn Cys Cys Asn Thr Thr Tyr
```

275 280 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Cys
290 295 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Tyr Ala Thr His Ala Ala
305 310 315 320

Arg

<210> 649
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 649

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Trp Ser Asn
85 90 95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Gly Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Tyr
145 150 155 160

Thr Asn Gly Ala Arg Cys Ala Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

```
Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Gly
            260                 265                 270

Tyr Gly Ala Tyr Gly Ala Tyr Tyr Thr Asn Cys Cys Asn Tyr Thr Asn
        275                 280                 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys
    290                 295                 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 650
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 650

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Gly Ala Tyr Thr Ala Tyr
                85                  90                  95
```

```
Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Tyr
145                 150                 155                 160

Thr Asn Gly Ala Arg Cys Ala Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Tyr Thr Ala
            260                 265                 270

Tyr Gly Ala Tyr Ala Ala Tyr Tyr Thr Asn Cys Cys Asn Tyr Thr Asn
        275                 280                 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys
    290                 295                 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg
```

<210> 651
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 651

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Gly Cys Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Thr Ala Tyr
                85                  90                  95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Tyr
145                 150                 155                 160

Thr Asn Gly Ala Arg Cys Ala Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270
```

Tyr Gly Ala Tyr Ala Ala Tyr Tyr Thr Asn Cys Cys Asn Tyr Thr Asn
275 280 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys
290 295 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305 310 315 320

Arg

<210> 652
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 652

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Trp Ser Asn
85 90 95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Thr His Tyr
145 150 155 160

Thr Asn Gly Ala Arg Cys Ala Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn

180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Ala Arg Cys Ala Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Ala Thr
210 215 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Cys Ala Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Gly
260 265 270

Tyr Gly Ala Tyr Ala Thr His Tyr Thr Asn Cys Cys Asn Tyr Thr Asn
275 280 285

Trp Ser Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys
290 295 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305 310 315 320

Arg

<210> 653
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 653

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65 70 75 80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Trp Ser Asn
85 90 95

```
Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Tyr
145                 150                 155                 160

Thr Asn Gly Ala Arg Cys Ala Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270

Tyr Gly Ala Tyr Ala Ala Tyr Tyr Thr Asn Cys Cys Asn Tyr Thr Asn
        275                 280                 285

Gly Cys Asn Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys
    290                 295                 300

Ala Asn Ala Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Met Gly
305                 310                 315                 320

Asn
```

<210> 654
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 654

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Gly Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Cys Ala Asn Ala Ala Tyr Thr Ala Tyr
                85                  90                  95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Tyr
145                 150                 155                 160

Thr Asn Gly Ala Arg Cys Ala Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270
```

```
Tyr Gly Ala Tyr Trp Ser Asn Tyr Thr Asn Cys Cys Asn Ala Thr His
        275                 280                 285


Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
    290                 295                 300


Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320


Arg
```

<210> 655
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 655

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30


Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45


Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60


Ala Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80


Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Thr Ala Tyr
                85                  90                  95


Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110


Ala Arg Ala Ala Arg Tyr Thr Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125


Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140


Cys Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Tyr
145                 150                 155                 160


Thr Asn Gly Ala Arg Cys Ala Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175
```

```
Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Arg Thr Ala
            260                 265                 270

Tyr Gly Ala Tyr Ala Ala Tyr Tyr Thr Asn Cys Cys Asn Ala Thr His
        275                 280                 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
    290                 295                 300

Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320

Arg



<210>  656
<211>  321
<212>  PRT
<213>  Homo Sapiens

<400>  656

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Gly Ala Tyr Thr Ala Tyr
```

85 90 95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
100 105 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
115 120 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
130 135 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Tyr
145 150 155 160

Thr Asn Gly Ala Arg Cys Ala Asn Gly Gly Asn Gly Thr Asn Cys Cys
165 170 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
180 185 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
195 200 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Ala Thr
210 215 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225 230 235 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Cys Ala Asn Thr
245 250 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Tyr Thr Ala
260 265 270

Tyr Gly Ala Tyr Ala Ala Tyr Tyr Thr Asn Cys Cys Asn Ala Thr His
275 280 285

Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
290 295 300

Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305 310 315 320

Arg

<210> 657
<211> 321
<212> PRT
<213> Homo Sapiens

<400> 657

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60

Ala Asn Thr Gly Tyr Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala
65                  70                  75                  80

Arg Gly Ala Tyr Ala Thr His Trp Ser Asn Ala Ala Tyr Trp Ser Asn
                85                  90                  95

Tyr Thr Asn Ala Ala Tyr Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys
            100                 105                 110

Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys
        115                 120                 125

Asn Cys Cys Asn Ala Ala Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His
    130                 135                 140

Thr Ala Tyr Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Tyr
145                 150                 155                 160

Thr Asn Gly Ala Arg Cys Ala Asn Gly Gly Asn Gly Thr Asn Cys Cys
                165                 170                 175

Asn Trp Ser Asn Met Gly Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn
            180                 185                 190

Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly
        195                 200                 205

Ala Tyr Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Ala Thr
    210                 215                 220

His Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys Ala Arg Cys Cys Asn
225                 230                 235                 240

Gly Ala Arg Gly Ala Tyr Ala Thr His Gly Cys Asn Cys Ala Asn Thr
                245                 250                 255

Ala Tyr Thr Ala Tyr Thr Gly Tyr Cys Ala Arg Cys Ala Tyr Thr Ala
            260                 265                 270
```

```
Tyr Gly Ala Tyr Ala Ala Tyr Tyr Thr Asn Cys Cys Asn Ala Thr His
        275                 280                 285


Cys Ala Asn Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys
    290                 295                 300


Ala Asn Met Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala
305                 310                 315                 320


Arg



<210>  658
<211>  360
<212>  PRT
<213>  Homo Sapiens

<400>  658

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30


Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Cys Asn
        35                  40                  45


Trp Ser Asn Gly Thr Asn Ala Ala Arg Gly Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Ala Ala Arg Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Ala
65                  70                  75                  80


Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95


Gly Gly Asn Ala Thr His Trp Ser Asn Thr Gly Gly Gly Thr Asn Met
            100                 105                 110


Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Cys Ala
        115                 120                 125


Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140


Gly Gly Asn Thr Gly Gly Ala Thr His Trp Ser Asn Gly Cys Asn Trp
145                 150                 155                 160


Ser Asn Ala Ala Tyr Gly Gly Asn Ala Ala Tyr Cys Ala Asn Ala Ala
                165                 170                 175
```

```
Tyr Thr Ala Tyr Gly Cys Asn Cys Ala Arg Ala Ala Arg Tyr Thr Asn
            180                 185                 190


Cys Ala Arg Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala
        195                 200                 205


Thr Gly Cys Ala Asn Cys Ala Asn Gly Ala Tyr Cys Ala Asn Trp Ser
    210                 215                 220


Asn Cys Ala Asn Trp Ser Asn Cys Ala Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240


Ala Thr Gly Gly Ala Arg Tyr Thr Asn Met Gly Asn Trp Ser Asn Tyr
                245                 250                 255


Thr Asn Met Gly Asn Trp Ser Asn Gly Ala Tyr Gly Ala Tyr Cys Ala
            260                 265                 270


Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285


Gly Cys Asn Met Gly Asn Gly Ala Arg Gly Ala Tyr Ala Ala Tyr Thr
    290                 295                 300


Gly Gly Ala Ala Tyr Thr Ala Tyr Gly Gly Asn Thr Thr Tyr Thr Thr
305                 310                 315                 320


Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg
                325                 330                 335


Gly Gly Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly
            340                 345                 350


Thr Asn Trp Ser Asn Trp Ser Asn
        355                 360


<210>  659
<211>  351
<212>  PRT
<213>  Homo Sapiens

<400>  659

Cys Ala Arg Gly Thr Asn Cys Ala Tyr Tyr Thr Asn Gly Thr Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30


Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Cys Asn
        35                  40                  45
```

```
Trp Ser Asn Gly Thr Asn Ala Ala Arg Gly Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Gly Gly Asn Thr Ala
65                  70                  75                  80

Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Gly Gly Asn Cys Ala Tyr
                85                  90                  95

Thr Ala Tyr Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Cys Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140

Gly Gly Asn Thr Gly Gly Ala Thr His Ala Ala Tyr Cys Cys Asn Ala
145                 150                 155                 160

Ala Tyr Trp Ser Asn Gly Gly Asn Gly Gly Asn Cys Ala Asn Ala Ala
                165                 170                 175

Tyr Thr Gly Tyr Gly Cys Asn Cys Ala Arg Ala Ala Arg Thr Thr Tyr
            180                 185                 190

Cys Ala Arg Gly Gly Asn Met Gly Asn Gly Thr Asn Cys Ala Asn Ala
        195                 200                 205

Thr Gly Cys Ala Asn Met Gly Asn Gly Ala Tyr Cys Ala Asn Trp Ser
    210                 215                 220

Asn Ala Thr His Trp Ser Asn Cys Ala Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240

Ala Thr Gly Gly Ala Arg Tyr Thr Asn Trp Ser Asn Met Gly Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Trp Ser Asn Gly Ala Tyr Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Trp Ser Asn Ala Thr His Gly Cys Asn Gly
    290                 295                 300

Thr Asn Gly Cys Asn Tyr Thr Asn Gly Ala Tyr Thr Ala Tyr Thr Gly
305                 310                 315                 320
```

```
Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Tyr Thr Asn
                325                 330                 335


Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
            340                 345                 350


<210>  660
<211>  351
<212>  PRT
<213>  Homo Sapiens

<400>  660

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30


Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Cys Asn
        35                  40                  45


Trp Ser Asn Gly Thr Asn Ala Ala Arg Gly Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Ala Ala Arg Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Ala
65                  70                  75                  80


Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Gly Gly Asn Thr Ala Tyr
                85                  90                  95


Thr Ala Tyr Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110


Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Cys Ala
        115                 120                 125


Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140


Gly Gly Asn Thr Gly Gly Ala Thr His Ala Ala Tyr Cys Cys Asn Ala
145                 150                 155                 160


Ala Tyr Trp Ser Asn Gly Gly Asn Gly Gly Asn Cys Ala Asn Ala Ala
                165                 170                 175


Tyr Cys Ala Tyr Cys Ala Asn Cys Ala Arg Ala Ala Arg Thr Thr Tyr
            180                 185                 190


Cys Ala Arg Gly Gly Asn Met Gly Asn Gly Thr Asn Cys Ala Asn Ala
        195                 200                 205


Thr Gly Cys Ala Asn Met Gly Asn Gly Ala Tyr Cys Ala Asn Trp Ser
```

210 215 220

Asn Ala Thr His Trp Ser Asn Cys Ala Asn Gly Cys Asn Thr Ala Tyr
225 230 235 240

Ala Thr Gly Gly Ala Arg Tyr Thr Asn Trp Ser Asn Met Gly Asn Tyr
245 250 255

Thr Asn Met Gly Asn Trp Ser Asn Gly Ala Tyr Gly Ala Tyr Cys Ala
260 265 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
275 280 285

Gly Cys Asn Met Gly Asn Trp Ser Asn Ala Thr His Gly Cys Asn Gly
290 295 300

Thr Asn Gly Cys Asn Tyr Thr Asn Gly Ala Tyr Thr Ala Tyr Thr Gly
305 310 315 320

Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Tyr Thr Asn
325 330 335

Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
340 345 350

<210> 661
<211> 366
<212> PRT
<213> Homo Sapiens

<400> 661

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
20 25 30

Asn Met Gly Asn Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Cys Asn
35 40 45

Trp Ser Asn Gly Thr Asn Ala Ala Arg Gly Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn Gly Gly Asn Thr Ala
65 70 75 80

Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Gly Ala Arg Tyr Thr Asn
85 90 95

Trp Ser Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
100 105 110

```
Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140

Gly Gly Asn Trp Ser Asn Thr Thr Tyr Gly Ala Tyr Cys Cys Asn Gly
145                 150                 155                 160

Ala Arg Gly Ala Tyr Gly Gly Asn Gly Ala Arg Cys Ala Asn Ala Thr
                165                 170                 175

His Thr Ala Tyr Gly Cys Asn Cys Ala Arg Ala Ala Arg Thr Thr Tyr
            180                 185                 190

Cys Ala Arg Gly Gly Asn Met Gly Asn Gly Thr Asn Cys Ala Asn Ala
        195                 200                 205

Thr Gly Tyr Thr Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Trp Ser
    210                 215                 220

Asn Cys Ala Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240

Ala Thr Gly Gly Ala Arg Tyr Thr Asn Trp Ser Asn Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Trp Ser Asn Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Cys Ala Asn Gly Ala Arg Gly Gly Asn Gly Ala Tyr Gly
    290                 295                 300

Gly Asn Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly Gly
                325                 330                 335

Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys Ala Asn Gly
            340                 345                 350

Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
        355                 360                 365
```

<210> 662
<211> 366

<212> PRT
<213> Homo Sapiens

<400> 662

```
Cys Ala Arg Gly Thr Asn Cys Ala Asn Tyr Thr Asn Ala Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Thr Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Cys Ala Asn Gly Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Trp Ser Asn Tyr Thr Asn Trp Ser Asn Ala Ala Tyr Gly Cys Asn
                85                  90                  95

Met Gly Asn Ala Thr Gly Gly Gly Asn Gly Thr Asn Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Tyr Thr Asn Gly Cys Asn Cys Ala Tyr Ala Thr His Thr
145                 150                 155                 160

Thr Tyr Trp Ser Asn Ala Ala Tyr Gly Ala Tyr Gly Ala Arg Ala Ala
                165                 170                 175

Arg Trp Ser Asn Thr Ala Tyr Trp Ser Asn Cys Ala Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Tyr Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Trp Ser Asn Ala Ala Arg Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Trp Ser Asn Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Tyr Thr Asn Cys Ala Asn Ala Thr Gly Cys Ala Asn Ala
                245                 250                 255
```

```
Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Ala Thr Gly Thr Ala Tyr Trp
    290                 295                 300

Ser Asn Trp Ser Asn Gly Gly Asn Thr Gly Gly Thr Ala Tyr Gly Gly
305                 310                 315                 320

Asn Gly Thr Asn Thr Thr Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly
                325                 330                 335

Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Tyr Thr Asn Gly
            340                 345                 350

Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
        355                 360                 365


<210>  663
<211>  369
<212>  PRT
<213>  Homo Sapiens

<400>  663

Cys Ala Arg Gly Thr Asn Cys Ala Asn Tyr Thr Asn Ala Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Thr Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Cys Ala Asn Gly Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Trp Ser Asn Tyr Thr Asn Trp Ser Asn Ala Ala Tyr Gly Cys Asn
                85                  90                  95

Met Gly Asn Ala Thr Gly Gly Gly Asn Gly Thr Asn Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125
```

```
Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Tyr Thr Asn Gly Thr Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160

Thr Tyr Trp Ser Asn Ala Ala Tyr Gly Ala Tyr Gly Ala Arg Ala Ala
                165                 170                 175

Arg Trp Ser Asn Thr Ala Tyr Trp Ser Asn Cys Ala Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Tyr Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Trp Ser Asn Ala Ala Arg Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Trp Ser Asn Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Tyr Thr Asn Cys Ala Asn Ala Thr Gly Cys Ala Asn Ala
                245                 250                 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Thr Asn Thr Ala Tyr Trp
    290                 295                 300

Ser Asn Trp Ser Asn Gly Gly Asn Thr Gly Gly Trp Ser Asn Thr Thr
305                 310                 315                 320

Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
                325                 330                 335

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys
            340                 345                 350

Ala Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser
        355                 360                 365

Asn
```

<210> 664
<211> 354
<212> PRT
<213> Homo Sapiens

<400> 664

```
Cys Ala Arg Ala Thr His Cys Ala Asn Tyr Thr Asn Ala Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Cys Ala Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Cys Ala Asn Cys Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Trp Ser Asn Tyr Thr Asn Trp Ser Asn Cys Ala Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Tyr Thr Asn Gly Cys Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Ala Tyr Gly Ala Tyr Ala Ala
                165                 170                 175

Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Tyr Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Cys Ala Asn Ala Ala Arg Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Tyr Thr Asn Cys Ala Asn Ala Thr Gly Cys Ala Asn Ala
                245                 250                 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
```

260 265 270

Tyr Cys Ala Asn Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr
275 280 285

Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Met Gly Asn Gly
290 295 300

Ala Arg Tyr Thr Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
305 310 315 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn
325 330 335

Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp
340 345 350

Ser Asn

<210> 665
<211> 354
<212> PRT
<213> Homo Sapiens

<400> 665

Cys Ala Arg Ala Thr His Cys Ala Asn Tyr Thr Asn Ala Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Cys Ala Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Cys Ala Asn Cys Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Cys Ala Asn Thr
50 55 60

Gly Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
65 70 75 80

Tyr Trp Ser Asn Tyr Thr Asn Trp Ser Asn Cys Ala Asn Gly Gly Asn
85 90 95

Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
100 105 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
115 120 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Tyr Thr Asn Gly Ala Arg
130 135 140

```
Thr Gly Gly Tyr Thr Asn Gly Cys Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Ala Tyr Gly Ala Tyr Ala Ala
                165                 170                 175

Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Tyr Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Cys Ala Asn Ala Ala Arg Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Cys Ala Asn Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Tyr Thr Asn Cys Ala Asn Gly Thr Asn Cys Ala Asn Gly
                245                 250                 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Ala Ala Tyr Thr
    290                 295                 300

Gly Gly Cys Ala Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn
                325                 330                 335

Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp
            340                 345                 350

Ser Asn
```

<210> 666
<211> 354
<212> PRT
<213> Homo Sapiens

<400> 666

```
Cys Ala Arg Ala Thr His Cys Ala Asn Tyr Thr Asn Ala Ala Arg Gly
1               5                   10                  15
```

```
Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Cys Ala Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Cys Ala Asn Cys Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Trp Ser Asn Tyr Thr Asn Ala Ala Tyr Cys Ala Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Tyr Thr Asn Gly Cys Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Ala Tyr Gly Ala Tyr Ala Ala
                165                 170                 175

Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Tyr Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Cys Ala Asn Ala Ala Arg Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Tyr Thr Asn Cys Ala Asn Ala Thr Gly Cys Ala Asn Ala
                245                 250                 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285
```

```
Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Tyr Thr Asn Gly
    290                 295                 300

Ala Arg Tyr Thr Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn
                325                 330                 335

Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp
            340                 345                 350

Ser Asn
```

<210> 667
<211> 354
<212> PRT
<213> Homo Sapiens

<400> 667

```
Cys Ala Arg Ala Thr His Cys Ala Asn Tyr Thr Asn Ala Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Cys Ala Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Cys Ala Asn Cys Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Trp Ser Asn Tyr Thr Asn Trp Ser Asn Cys Ala Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Tyr Thr Asn Gly Cys Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160
```

```
Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Ala Tyr Gly Ala Tyr Ala Ala
                165                 170                 175

Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Tyr Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Cys Ala Asn Ala Ala Arg Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Tyr Thr Asn Cys Ala Asn Ala Thr Gly Cys Ala Asn Ala
                245                 250                 255

Ala Tyr Tyr Thr Asn Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Met Gly Asn Gly
    290                 295                 300

Ala Arg Gly Thr Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn
                325                 330                 335

Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp
            340                 345                 350

Ser Asn
```

<210> 668
<211> 354
<212> PRT
<213> Homo Sapiens

<400> 668

```
Cys Ala Arg Ala Thr His Cys Ala Asn Tyr Thr Asn Ala Ala Arg Gly
1               5                  10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Cys Ala Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Cys Ala Asn Cys Ala Arg
```

```
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Trp Ser Asn Tyr Thr Asn Trp Ser Asn Cys Ala Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Tyr Thr Asn Gly Cys Asn Tyr Thr Asn Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Thr Asn Gly Ala Arg Ala Ala
                165                 170                 175

Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Met Gly Asn Trp Ser Asn Met Gly Asn Tyr Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Cys Ala Asn Ala Ala Arg Gly Cys Asn Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Tyr Thr Asn Cys Ala Asn Ala Thr Gly Cys Ala Asn Ala
                245                 250                 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Cys Ala Tyr Cys
    290                 295                 300

Ala Asn Ala Ala Tyr Cys Cys Asn Thr Thr Tyr Gly Ala Arg Thr Ala
```

305 310 315 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn
325 330 335

Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp
340 345 350

Ser Asn

<210> 669
<211> 354
<212> PRT
<213> Homo Sapiens

<400> 669

Cys Ala Arg Ala Thr His Cys Ala Asn Tyr Thr Asn Ala Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Cys Ala Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Cys Ala Asn Cys Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Cys Ala Asn Thr
50 55 60

Gly Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Thr
65 70 75 80

Tyr Trp Ser Asn Tyr Thr Asn Trp Ser Asn Cys Ala Asn Gly Gly Asn
85 90 95

Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Thr
100 105 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
115 120 125

Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Tyr Thr Asn Gly Ala Arg
130 135 140

Thr Gly Gly Tyr Thr Asn Gly Cys Asn Tyr Thr Asn Ala Thr His Thr
145 150 155 160

Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Ala Tyr Gly Ala Tyr Ala Ala
165 170 175

Arg Met Gly Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn
180 185 190

```
Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Tyr Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Cys Ala Asn Ala Ala Arg Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Gly Thr Asn
225                 230                 235                 240

Gly Thr Asn Tyr Thr Asn Cys Ala Asn Ala Thr Gly Cys Ala Asn Ala
                245                 250                 255

Ala Tyr Ala Thr Gly Gly Ala Tyr Cys Cys Asn Gly Thr Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Cys Ala Tyr Met Gly Asn Gly Gly Asn Gly
    290                 295                 300

Ala Arg Tyr Thr Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn
                325                 330                 335

Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp
            340                 345                 350

Ser Asn
```

<210> 670
<211> 363
<212> PRT
<213> Homo Sapiens

<400> 670

```
Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
        35                  40                  45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60
```

```
Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Cys Cys Asn Thr Thr Tyr Trp Ser Asn Met Gly Asn Thr Ala Tyr
                85                  90                  95

Trp Ser Asn Ala Thr Gly Ala Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Trp Ser Asn Gly Cys Asn Ala Thr His Trp Ser Asn Trp Ser Asn Trp
145                 150                 155                 160

Ser Asn Trp Ser Asn Trp Ser Asn Thr Ala Tyr Ala Thr His Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Thr Ala Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Gly Ala Tyr Met Gly Asn Gly Thr Asn Gly
    290                 295                 300

Gly Asn Gly Cys Asn Cys Ala Asn Cys Cys Asn Gly Ala Tyr Gly Cys
305                 310                 315                 320

Asn Thr Thr Tyr Gly Ala Tyr Ala Thr His Thr Gly Gly Gly Gly Asn
                325                 330                 335
```

```
Cys Ala Arg Gly Gly Asn Cys Ala Asn Ala Thr Gly Gly Thr Asn Cys
            340                 345                 350


Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
        355                 360


<210>  671
<211>  384
<212>  PRT
<213>  Homo Sapiens

<400>  671

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Tyr Thr Asn Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Tyr Thr
            20                  25                  30


Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
        35                  40                  45


Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80


Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95


Gly Cys Asn Ala Thr Gly Ala Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110


Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125


Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140


Trp Ser Asn Gly Cys Asn Ala Thr His Trp Ser Asn Gly Gly Asn Trp
145                 150                 155                 160


Ser Asn Gly Gly Asn Gly Gly Asn Trp Ser Asn Cys Ala Asn Thr Ala
                165                 170                 175


Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190


Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
        195                 200                 205
```

```
Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Ala Ala Arg Gly Ala Arg Gly Gly Asn Ala Thr His Gly
    290                 295                 300

Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Ala Asn Gly Cys
305                 310                 315                 320

Asn Gly Ala Arg Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr
                325                 330                 335

Thr Ala Tyr Gly Cys Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr
            340                 345                 350

Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys Ala
        355                 360                 365

Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
    370                 375                 380


<210>  672
<211>  375
<212>  PRT
<213>  Homo Sapiens

<400>  672

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Tyr Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
        35                  40                  45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
```

65 70 75 80

Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Gly Cys Asn Ala Thr Gly Trp Ser Asn Thr Gly Gly Gly Thr Asn Met
100 105 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
115 120 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
130 135 140

Trp Ser Asn Gly Cys Asn Ala Thr His Trp Ser Asn Gly Gly Asn Trp
145 150 155 160

Ser Asn Gly Gly Asn Gly Gly Asn Trp Ser Asn Cys Ala Asn Thr Ala
165 170 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
180 185 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
195 200 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
210 215 220

Asn Ala Ala Arg Ala Ala Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr
225 230 235 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
245 250 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
260 265 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
275 280 285

Gly Cys Asn Ala Ala Arg Gly Ala Arg Gly Gly Asn Ala Thr His Gly
290 295 300

Cys Asn Gly Cys Asn Met Gly Asn Gly Ala Tyr Trp Ser Asn Thr Ala
305 310 315 320

Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Cys Asn Ala Thr Gly
325 330 335

Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly

340 345 350

Gly Asn Cys Ala Asn Cys Ala Asn Gly Thr Asn Cys Ala Asn Gly Thr
355 360 365

Asn Trp Ser Asn Trp Ser Asn
370 375

<210> 673
<211> 375
<212> PRT
<213> Homo Sapiens

<400> 673

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Tyr Thr Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
35 40 45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Cys Ala Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65 70 75 80

Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Gly Cys Asn Ala Thr Gly Trp Ser Asn Thr Gly Gly Gly Thr Asn Met
100 105 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
115 120 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
130 135 140

Trp Ser Asn Gly Cys Asn Ala Thr His Trp Ser Asn Gly Gly Asn Trp
145 150 155 160

Ser Asn Gly Gly Asn Gly Gly Asn Trp Ser Asn Cys Ala Asn Thr Ala
165 170 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
180 185 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
195 200 205

```
Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Ala Arg Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Ala Ala Arg Gly Ala Arg Gly Gly Asn Ala Thr His Gly
    290                 295                 300

Cys Asn Gly Gly Asn Met Gly Asn Gly Ala Tyr Trp Ser Asn Thr Ala
305                 310                 315                 320

Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly
                325                 330                 335

Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
            340                 345                 350

Gly Asn Cys Ala Asn Cys Ala Asn Gly Thr Asn Cys Ala Asn Gly Thr
        355                 360                 365

Asn Trp Ser Asn Trp Ser Asn
    370                 375


<210>  674
<211>  369
<212>  PRT
<213>  Homo Sapiens

<400>  674

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60
```

```
Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Gly Cys Asn Thr Thr Tyr Ala Thr His Trp Ser Asn Gly Ala Tyr Gly
145                 150                 155                 160

Ala Tyr Gly Gly Asn Trp Ser Asn Cys Ala Asn Ala Ala Arg Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Thr Gly Ala Ala Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Trp Ser Asn Thr Ala Tyr Thr Ala Tyr Gly
    290                 295                 300

Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn Thr Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Ala Tyr Gly Gly Asn Thr Thr Tyr Gly Ala Tyr Thr Ala Tyr
                325                 330                 335
```

```
Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Tyr
            340                 345                 350

Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser
        355                 360                 365

Asn
```

<210> 675
<211> 342
<212> PRT
<213> Homo Sapiens

<400> 675

```
Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly
145                 150                 155                 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190
```

```
Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Ala Ala Tyr Gly Thr Asn Ala Thr His Gly
    290                 295                 300

Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly
305                 310                 315                 320

Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn
                325                 330                 335

Trp Ser Asn Trp Ser Asn
            340


<210>  676
<211>  360
<212>  PRT
<213>  Homo Sapiens

<400>  676

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
```

85 90 95

Gly Ala Tyr Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
100 105 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
115 120 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
130 135 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly
145 150 155 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Thr His Ala Ala Arg Thr Ala
165 170 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
180 185 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
195 200 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
210 215 220

Asn Ala Ala Arg Ala Ala Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr
225 230 235 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
245 250 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
260 265 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
275 280 285

Gly Cys Asn Met Gly Asn Gly Gly Asn Gly Gly Asn Gly Cys Asn Cys
290 295 300

Ala Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Thr Ala Tyr Thr Thr
305 310 315 320

Tyr Cys Ala Arg Cys Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg
325 330 335

Gly Gly Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly
340 345 350

Thr Asn Trp Ser Asn Trp Ser Asn

355 360

<210> 677
<211> 354
<212> PRT
<213> Homo Sapiens

<400> 677

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
20 25 30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
35 40 45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65 70 75 80

Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
100 105 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
115 120 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
130 135 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly
145 150 155 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Thr Ala
165 170 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
180 185 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
195 200 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
210 215 220

Asn Ala Ala Arg Ala Ala Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr
225 230 235 240

```
Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Thr Asn Tyr Thr Asn Tyr Thr Asn Thr Gly Gly Thr Thr Tyr Gly
    290                 295                 300

Gly Asn Gly Ala Arg Cys Ala Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Trp Ser Asn
                325                 330                 335

Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Cys
            340                 345                 350

Cys Asn
```

<210> 678
<211> 345
<212> PRT
<213> Homo Sapiens

<400> 678

```
Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110
```

```
Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Trp Ser Asn Gly
145                 150                 155                 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Ala Ala Tyr Tyr Thr Asn Cys Cys Asn Thr
    290                 295                 300

Thr Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala
305                 310                 315                 320

Arg Gly Gly Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn
                325                 330                 335

Gly Thr Asn Trp Ser Asn Trp Ser Asn
            340                 345
```

<210> 679
<211> 369
<212> PRT
<213> Homo Sapiens

<400> 679

```
Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Gly Ala Tyr Gly
145                 150                 155                 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Cys Ala Arg Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Cys Ala Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Gly
        195                 200                 205

Thr Asn Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Cys Ala Asn Tyr Thr Asn Thr Thr Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270
```

```
Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Trp Ser Asn Cys Ala Tyr Thr Ala Tyr Gly
    290                 295                 300

Gly Asn Gly Gly Asn Gly Ala Tyr Thr Ala Tyr Gly Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
                325                 330                 335

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys
            340                 345                 350

Ala Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser
        355                 360                 365

Asn
```

<210> 680
<211> 360
<212> PRT
<213> Homo Sapiens

<400> 680

```
Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
```

130 135 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly
145 150 155 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Met Gly
165 170 175

Asn Thr Ala Tyr Gly Thr Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
180 185 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
195 200 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
210 215 220

Asn Ala Ala Arg Ala Ala Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr
225 230 235 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
245 250 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
260 265 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
275 280 285

Gly Cys Asn Met Gly Asn Gly Ala Tyr Gly Gly Asn Thr Gly Gly Cys
290 295 300

Ala Arg Cys Ala Arg Cys Ala Arg Gly Cys Asn Cys Cys Asn Thr Thr
305 310 315 320

Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg
325 330 335

Gly Gly Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly
340 345 350

Thr Asn Trp Ser Asn Trp Ser Asn
355 360

<210> 681
<211> 354
<212> PRT
<213> Homo Sapiens

<400> 681

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1 5 10 15

```
Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
        35                  40                  45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Cys Ala Asn Thr Thr Tyr Met Gly Asn Trp Ser Asn Cys Ala Tyr
                85                  90                  95

Gly Gly Asn Ala Thr Gly Cys Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Gly Cys Asn Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly
145                 150                 155                 160

Ala Tyr Gly Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Ala Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Met Gly Asn Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Cys Ala Asn Tyr Thr Asn Gly Ala Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Gly Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285
```

```
Gly Cys Asn Met Gly Asn Thr Gly Gly Gly Gly Asn Ala Thr His Trp
    290                 295                 300

Ser Asn Gly Cys Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Gly
305                 310                 315                 320

Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn
                325                 330                 335

Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp
            340                 345                 350

Ser Asn
```

<210> 682
<211> 345
<212> PRT
<213> Homo Sapiens

<400> 682

```
Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
        35                  40                  45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Gly Cys Asn Thr Ala Tyr
                85                  90                  95

Trp Ser Asn Ala Thr Gly Ala Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Trp Ser Asn Thr Ala Tyr Ala Thr His Trp Ser Asn Trp Ser Asn Trp
145                 150                 155                 160
```

```
Ser Asn Gly Gly Asn Met Gly Asn Cys Ala Asn Ala Thr His Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Thr Thr Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Gly Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Tyr Thr Asn Thr Gly Gly Gly Cys Asn Cys Cys Asn Thr
    290                 295                 300

Thr Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala
305                 310                 315                 320

Arg Gly Gly Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn
                325                 330                 335

Gly Thr Asn Trp Ser Asn Trp Ser Asn
            340                 345


<210>  683
<211>  375
<212>  PRT
<213>  Homo Sapiens

<400>  683

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
        35                  40                  45
```

```
Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80

Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Trp Ser Asn Ala Thr Gly Ala Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140

Trp Ser Asn Cys Ala Tyr Ala Thr His Trp Ser Asn Trp Ser Asn Trp
145                 150                 155                 160

Ser Asn Trp Ser Asn Met Gly Asn Cys Ala Asn Ala Thr His Thr Ala
                165                 170                 175

Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
            180                 185                 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys
    210                 215                 220

Asn Ala Ala Arg Ala Ala Tyr Trp Ser Asn Gly Thr Asn Thr Ala Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Met Gly Asn Gly Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Gly Ala Tyr Gly Gly Asn Thr Ala Tyr Ala
    290                 295                 300

Ala Tyr Thr Gly Gly Ala Ala Tyr Gly Gly Asn Gly Gly Asn Gly Gly
305                 310                 315                 320
```

```
Asn Ala Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly
                325                 330                 335


Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
            340                 345                 350


Gly Asn Cys Ala Asn Cys Ala Asn Gly Thr Asn Cys Ala Asn Gly Thr
        355                 360                 365


Asn Trp Ser Asn Trp Ser Asn
    370                 375


<210>  684
<211>  375
<212>  PRT
<213>  Homo Sapiens

<400>  684

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Tyr Thr
            20                  25                  30


Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
        35                  40                  45


Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Thr
65                  70                  75                  80


Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95


Trp Ser Asn Ala Thr Gly Ala Ala Tyr Thr Gly Gly Gly Thr Asn Met
            100                 105                 110


Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125


Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Gly Thr Asn
    130                 135                 140


Trp Ser Asn Cys Ala Tyr Ala Thr His Trp Ser Asn Met Gly Asn Trp
145                 150                 155                 160


Ser Asn Trp Ser Asn Met Gly Asn Cys Ala Asn Ala Thr His Thr Ala
                165                 170                 175


Tyr Thr Ala Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn
```

180 185 190

Ala Ala Arg Gly Gly Asn Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala
195 200 205

Thr His Trp Ser Asn Met Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys
210 215 220

Asn Ala Ala Arg Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Thr Ala Tyr
225 230 235 240

Tyr Thr Asn Cys Ala Arg Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr
245 250 255

Thr Asn Met Gly Asn Gly Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Ala
260 265 270

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
275 280 285

Gly Cys Asn Met Gly Asn Gly Ala Tyr Gly Gly Asn Thr Ala Tyr Ala
290 295 300

Ala Tyr Thr Gly Gly Ala Ala Tyr Ala Ala Tyr Gly Gly Asn Gly Gly
305 310 315 320

Asn Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly
325 330 335

Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
340 345 350

Gly Asn Cys Ala Asn Cys Ala Asn Gly Thr Asn Cys Ala Asn Gly Thr
355 360 365

Asn Trp Ser Asn Trp Ser Asn
370 375

<210> 685
<211> 354
<212> PRT
<213> Homo Sapiens

<400> 685

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
35 40 45

```
Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
145                 150                 155                 160

Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Trp Ser Asn Gly Thr Asn Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Tyr Thr Asn Ala Ala Tyr Tyr Thr Asn Trp Ser Asn Trp
                245                 250                 255

Ser Asn Gly Thr Asn Cys Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Gly Asn Cys Cys Asn Thr
    290                 295                 300

Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr
305                 310                 315                 320
```

```
Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn
                325                 330                 335

Cys Ala Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp
            340                 345                 350

Ser Asn
```

<210> 686
<211> 381
<212> PRT
<213> Homo Sapiens

<400> 686

```
Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Met Gly Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Cys Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190
```

```
Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Ala
        195                 200                 205

Ala Tyr Ala Thr Gly Trp Ser Asn Gly Thr Asn Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Tyr Thr Asn Trp Ser Asn Trp
                245                 250                 255

Ser Asn Gly Thr Asn Cys Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Cys Asn Tyr Thr Asn Met
    290                 295                 300

Gly Asn Gly Gly Asn Ala Thr His Gly Thr Asn Tyr Thr Asn Ala Thr
305                 310                 315                 320

Gly Gly Thr Asn Thr Ala Tyr Gly Thr Asn Tyr Thr Asn Gly Gly Asn
                325                 330                 335

Gly Cys Asn Tyr Thr Asn Gly Ala Tyr Ala Thr His Thr Gly Gly Gly
            340                 345                 350

Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Ala Ala Arg Gly Thr
        355                 360                 365

Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
    370                 375                 380


<210>  687
<211>  381
<212>  PRT
<213>  Homo Sapiens

<400>  687

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45
```

```
Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Trp Ser Asn Gly Thr Asn Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Tyr Thr Asn Trp Ser Asn Trp
                245                 250                 255

Ser Asn Gly Thr Asn Cys Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Ala Tyr Gly Ala Arg Cys
    290                 295                 300

Ala Asn Gly Thr Asn Gly Thr Asn Met Gly Asn Gly Gly Asn Tyr Thr
305                 310                 315                 320
```

```
Asn Ala Thr His Met Gly Asn Thr Ala Tyr Thr Gly Tyr Thr Ala Tyr
                325                 330                 335

Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly
            340                 345                 350

Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys Ala Asn Gly Thr
        355                 360                 365

Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
    370                 375                 380


<210>  688
<211>  366
<212>  PRT
<213>  Homo Sapiens

<400>  688

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Ala Ala Tyr Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
145                 150                 155                 160

Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
```

180 185 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Ala Thr His Cys
195 200 205

Ala Asn Ala Thr His Trp Ser Asn Gly Cys Asn Gly Ala Tyr Cys Ala
210 215 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225 230 235 240

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Tyr Thr Asn Ala Ala Tyr Trp
245 250 255

Ser Asn Gly Thr Asn Cys Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala
260 265 270

Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
275 280 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Ala Tyr Met Gly Asn Gly
290 295 300

Gly Asn Gly Gly Asn Gly Gly Asn Gly Ala Tyr Thr Ala Tyr Gly Gly
305 310 315 320

Asn Met Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly Gly
325 330 335

Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys Ala Asn Gly
340 345 350

Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
355 360 365

<210> 689
<211> 366
<212> PRT
<213> Homo Sapiens

<400> 689

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Ala Ala Tyr Thr
50 55 60

```
Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
145                 150                 155                 160

Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Ala Thr His Cys
        195                 200                 205

Ala Asn Ala Thr His Trp Ser Asn Gly Cys Asn Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Tyr Thr Asn Ala Ala Tyr Trp
                245                 250                 255

Ser Asn Gly Thr Asn Cys Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly Ala Tyr Met Gly Asn Gly
    290                 295                 300

Gly Asn Gly Gly Asn Gly Gly Asn Gly Ala Tyr Thr Ala Tyr Gly Gly
305                 310                 315                 320

Asn Met Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly Gly
                325                 330                 335
```

```
Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys Ala Asn Gly
            340                 345                 350

Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
        355                 360                 365
```

<210> 690
<211> 357
<212> PRT
<213> Homo Sapiens

<400> 690

```
Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
145                 150                 155                 160

Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Ala Thr His Cys
        195                 200                 205
```

```
Ala Asn Ala Ala Arg Trp Ser Asn Gly Thr Asn Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Tyr Thr Asn Trp Ser Asn Trp
                245                 250                 255

Ser Asn Gly Thr Asn Cys Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Trp Ser Asn Ala Ala Tyr Ala
    290                 295                 300

Ala Tyr Thr Ala Tyr Gly Gly Asn Thr Gly Tyr Thr Thr Tyr Gly Cys
305                 310                 315                 320

Asn Tyr Thr Asn Thr Gly Gly Gly Gly Asn Met Gly Asn Gly Gly Asn
                325                 330                 335

Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp
            340                 345                 350

Ser Asn Trp Ser Asn
        355


<210>  691
<211>  357
<212>  PRT
<213>  Homo Sapiens

<400>  691

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80
```

```
Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
145                 150                 155                 160

Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Ala Thr His Cys
        195                 200                 205

Ala Asn Ala Ala Arg Trp Ser Asn Gly Thr Asn Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Tyr Thr Asn Trp Ser Asn Trp
                245                 250                 255

Ser Asn Gly Thr Asn Cys Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Trp Ser Asn Ala Ala Tyr Ala
    290                 295                 300

Ala Tyr Thr Ala Tyr Gly Gly Asn Thr Gly Tyr Thr Thr Tyr Gly Cys
305                 310                 315                 320

Asn Tyr Thr Asn Thr Gly Gly Gly Gly Asn Met Gly Asn Gly Gly Asn
                325                 330                 335

Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp
            340                 345                 350
```

```
Ser Asn Trp Ser Asn
        355


<210>  692
<211>  399
<212>  PRT
<213>  Homo Sapiens

<400>  692

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45


Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60


Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80


Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95


Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110


Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125


Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140


Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Cys
145                 150                 155                 160


Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Cys Ala
                165                 170                 175


Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190


Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Cys
        195                 200                 205


Ala Asn Ala Thr His Trp Ser Asn Gly Thr Asn Gly Ala Tyr Cys Ala
    210                 215                 220


Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
```

225 230 235 240

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Tyr Thr Asn Trp Ser Asn Trp
245 250 255

Ser Asn Gly Thr Asn Cys Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala
260 265 270

Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
275 280 285

Thr Gly Tyr Gly Cys Asn Trp Ser Asn Gly Gly Asn Thr Ala Tyr Ala
290 295 300

Ala Tyr Thr Ala Tyr Gly Gly Asn Tyr Thr Asn Thr Ala Tyr Thr Ala
305 310 315 320

Tyr Thr Ala Tyr Gly Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn
325 330 335

Thr Ala Tyr Cys Cys Asn Trp Ser Asn Thr Ala Tyr Thr Ala Tyr Thr
340 345 350

Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly
355 360 365

Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys Ala Asn
370 375 380

Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
385 390 395

<210> 693
<211> 375
<212> PRT
<213> Homo Sapiens

<400> 693

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
50 55 60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65 70 75 80

```
Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Ala Ala Tyr Thr
            100                 105                 110

Gly Gly Gly Thr Asn Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Gly Gly Asn Cys Ala
                165                 170                 175

Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Trp Ser Asn Gly Thr Asn Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Tyr Thr Asn Thr Thr Tyr Trp
                245                 250                 255

Ser Asn Gly Thr Asn Cys Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Thr Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Cys Ala Asn Thr Ala Tyr Thr
    290                 295                 300

Ala Tyr Gly Ala Tyr Ala Thr His Tyr Thr Asn Cys Ala Asn Gly Gly
305                 310                 315                 320

Asn Thr Ala Tyr Cys Cys Asn Thr Thr Tyr Thr Ala Tyr Thr Thr Tyr
                325                 330                 335

Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
            340                 345                 350
```

```
Gly Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr
        355                 360                 365


Asn Trp Ser Asn Trp Ser Asn
    370                 375


<210>  694
<211>  375
<212>  PRT
<213>  Homo Sapiens

<400>  694

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30


Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45


Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60


Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80


Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95


Gly Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Ala Ala Tyr Thr
            100                 105                 110


Gly Gly Gly Thr Asn Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys Cys
        115                 120                 125


Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140


Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Thr
145                 150                 155                 160


Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Gly Gly Asn Cys Ala
                165                 170                 175


Asn Thr Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190


Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Cys
        195                 200                 205
```

```
Ala Asn Ala Thr His Trp Ser Asn Gly Thr Asn Gly Ala Tyr Cys Ala
    210                 215                 220

Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Tyr Thr Asn Thr Thr Tyr Trp
                245                 250                 255

Ser Asn Gly Thr Asn Cys Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270

Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Thr Tyr
        275                 280                 285

Thr Gly Tyr Gly Cys Asn Met Gly Asn Cys Ala Asn Thr Ala Tyr Thr
    290                 295                 300

Ala Tyr Gly Ala Tyr Ala Thr His Tyr Thr Asn Cys Ala Asn Gly Gly
305                 310                 315                 320

Asn Thr Ala Tyr Cys Cys Asn Thr Thr Tyr Thr Ala Tyr Thr Thr Tyr
                325                 330                 335

Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
            340                 345                 350

Gly Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr
        355                 360                 365

Asn Trp Ser Asn Trp Ser Asn
    370                 375


<210>  695
<211>  360
<212>  PRT
<213>  Homo Sapiens

<400>  695

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Cys
1               5                   10                  15

Ala Arg Thr Gly Gly Gly Gly Asn Gly Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Tyr Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Gly Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60
```

```
Gly Tyr Gly Cys Asn Gly Thr Asn Thr Ala Tyr Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Ala Tyr
                85                  90                  95

Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr Gly Gly Ala Thr His Met
            100                 105                 110

Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr His
    130                 135                 140

Gly Gly Asn Gly Ala Arg Ala Thr His Ala Ala Tyr Cys Ala Tyr Trp
145                 150                 155                 160

Ser Asn Gly Gly Asn Trp Ser Asn Cys Ala Asn Ala Ala Tyr Thr Ala
                165                 170                 175

Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg
            180                 185                 190

Trp Ser Asn Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Trp
        195                 200                 205

Ser Asn Gly Thr Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala
    210                 215                 220

Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn
225                 230                 235                 240

Ala Ala Arg Tyr Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Cys
                245                 250                 255

Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys
            260                 265                 270

Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn
        275                 280                 285

Met Gly Asn Gly Gly Asn Gly Gly Asn Thr Ala Tyr Trp Ser Asn Trp
    290                 295                 300

Ser Asn Trp Ser Asn Thr Gly Gly Thr Ala Tyr Thr Gly Gly Thr Thr
305                 310                 315                 320

Tyr Gly Ala Tyr Cys Cys Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg
                325                 330                 335
```

Gly Gly Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly
340 345 350

Thr Asn Trp Ser Asn Trp Ser Asn
355 360

<210> 696
<211> 360
<212> PRT
<213> Homo Sapiens

<400> 696

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Cys
1 5 10 15

Ala Arg Thr Gly Gly Gly Gly Asn Gly Cys Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Tyr Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Gly Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
50 55 60

Gly Tyr Gly Cys Asn Gly Thr Asn Thr Ala Tyr Gly Gly Asn Gly Gly
65 70 75 80

Asn Trp Ser Asn Thr Thr Tyr Trp Ser Asn Gly Gly Asn Thr Ala Tyr
85 90 95

Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr Gly Gly Ala Thr His Met
100 105 110

Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys Asn Gly Gly Asn Ala Ala
115 120 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr His
130 135 140

Gly Gly Asn Gly Ala Arg Ala Thr His Ala Ala Tyr Cys Ala Tyr Trp
145 150 155 160

Ser Asn Gly Gly Asn Trp Ser Asn Cys Ala Asn Ala Ala Tyr Thr Ala
165 170 175

Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg
180 185 190

Trp Ser Asn Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Trp
195 200 205

Ser Asn Gly Thr Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala

210 215 220

Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn
225 230 235 240

Ala Ala Arg Tyr Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Cys
245 250 255

Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys
260 265 270

Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn
275 280 285

Met Gly Asn Gly Gly Asn Gly Gly Asn Thr Ala Tyr Trp Ser Asn Trp
290 295 300

Ser Asn Trp Ser Asn Thr Gly Gly Thr Thr Tyr Thr Gly Gly Thr Thr
305 310 315 320

Tyr Gly Ala Tyr Cys Cys Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg
325 330 335

Gly Gly Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly
340 345 350

Thr Asn Trp Ser Asn Trp Ser Asn
355 360

<210> 697
<211> 369
<212> PRT
<213> Homo Sapiens

<400> 697

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Gly Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
50 55 60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65 70 75 80

Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr
85 90 95

```
Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr Gly Gly Ala Thr His Met
            100                 105                 110

Gly Asn Cys Ala Arg Cys Cys Asn Gly Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr His
    130                 135                 140

Gly Gly Asn Met Gly Asn Ala Thr His Thr Ala Tyr Cys Ala Asn Trp
145                 150                 155                 160

Ser Asn Gly Gly Asn Cys Ala Asn Cys Ala Asn Ala Ala Tyr Thr Ala
                165                 170                 175

Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg
            180                 185                 190

Trp Ser Asn Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr Gly Trp
        195                 200                 205

Ser Asn Gly Thr Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala
    210                 215                 220

Arg Ala Ala Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn
225                 230                 235                 240

Ala Ala Arg Tyr Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Cys
                245                 250                 255

Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys
            260                 265                 270

Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn
        275                 280                 285

Met Gly Asn Gly Ala Tyr Gly Gly Asn Thr Ala Tyr Trp Ser Asn Thr
    290                 295                 300

Ala Tyr Gly Gly Asn Cys Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala
305                 310                 315                 320

Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
                325                 330                 335

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys
            340                 345                 350

Ala Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser
        355                 360                 365
```

Asn

<210> 698
<211> 378
<212> PRT
<213> Homo Sapiens

<400> 698

```
Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Gly Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Gly Gly Asn Gly Gly
65                  70                  75                  80

Asn Trp Ser Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Gly Gly Asn
                85                  90                  95

Gly Gly Asn Trp Ser Asn Thr Ala Tyr Thr Gly Gly Trp Ser Asn Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys
        115                 120                 125

Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Ala Tyr Ala Thr His Thr
145                 150                 155                 160

Ala Tyr Thr Ala Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Cys Ala
                165                 170                 175

Asn Ala Ala Tyr Thr Ala Tyr Ala Ala Tyr Cys Cys Asn Trp Ser Asn
            180                 185                 190

Tyr Thr Asn Ala Ala Arg Trp Ser Asn Met Gly Asn Gly Thr Asn Cys
        195                 200                 205

Ala Asn Ala Thr His Trp Ser Asn Ala Thr His Gly Thr Asn Cys Ala
    210                 215                 220
```

```
Asn Trp Ser Asn Met Gly Asn Ala Ala Tyr Cys Ala Arg Thr Thr Tyr
225                 230                 235                 240


Trp Ser Asn Tyr Thr Asn Ala Ala Arg Tyr Thr Asn Trp Ser Asn Trp
                245                 250                 255


Ser Asn Gly Thr Asn Cys Ala Asn Gly Cys Asn Gly Cys Asn Gly Ala
            260                 265                 270


Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr
        275                 280                 285


Thr Gly Tyr Gly Cys Asn Met Gly Asn Trp Ser Asn Gly Cys Asn Tyr
    290                 295                 300


Thr Asn Met Gly Asn Thr Ala Tyr Thr Thr Tyr Gly Ala Tyr Thr Gly
305                 310                 315                 320


Gly Tyr Thr Asn Thr Thr Tyr Trp Ser Asn Gly Ala Tyr Gly Thr Asn
                325                 330                 335


Trp Ser Asn Gly Ala Tyr Ala Thr His Thr Gly Gly Gly Gly Asn Cys
            340                 345                 350


Ala Arg Gly Gly Asn Cys Ala Asn Ala Thr Gly Gly Thr Asn Cys Ala
        355                 360                 365


Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
    370                 375


<210>  699
<211>  360
<212>  PRT
<213>  Homo Sapiens

<400>  699

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Tyr Thr
            20                  25                  30


Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Ala Arg
        35                  40                  45


Trp Ser Asn Tyr Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Ala Ala Arg Gly Gly Asn Trp Ser Asn Gly Gly Asn Thr Ala
65                  70                  75                  80
```

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Tyr Met Gly Asn Thr Thr Tyr Cys Ala Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Gly Gly Gly Thr Asn Met
            100                 105                 110

Gly Asn Cys Ala Arg Ala Thr Gly Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140

Gly Gly Asn Ala Thr His Ala Thr His Thr Ala Tyr Cys Cys Asn Gly
145                 150                 155                 160

Ala Tyr Gly Ala Tyr Trp Ser Asn Gly Ala Tyr Cys Ala Asn Met Gly
                165                 170                 175

Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn Thr Thr Tyr
            180                 185                 190

Cys Ala Arg Gly Gly Asn Cys Ala Arg Gly Thr Asn Cys Ala Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Gly Cys Asn Gly Ala Tyr Ala Ala Arg Trp Ser
    210                 215                 220

Asn Ala Thr His Trp Ser Asn Cys Ala Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Thr Gly Gly Trp Ser Asn Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Ala Ala Arg Gly Cys Asn Trp Ser Asn Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Ala Thr Gly Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Cys Ala Arg Ala Ala Arg Trp Ser Asn Thr
    290                 295                 300

Ala Tyr Gly Gly Asn Thr Ala Tyr Trp Ser Asn Thr Ala Tyr Thr Thr
305                 310                 315                 320

Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn Cys Ala Arg
                325                 330                 335

Gly Gly Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys Ala Asn Gly
            340                 345                 350
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Thr Asn Trp Ser Asn Trp Ser Asn
355 360

<210> 700
<211> 363
<212> PRT
<213> Homo Sapiens

<400> 700

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
20 25 30

Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Ala Arg
35 40 45

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Thr
50 55 60

Gly Tyr Ala Ala Arg Gly Gly Asn Trp Ser Asn Gly Gly Asn Thr Ala
65 70 75 80

Tyr Trp Ser Asn Thr Thr Tyr Cys Ala Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Gly Gly Gly Thr Asn Met
100 105 110

Gly Asn Cys Ala Arg Ala Thr Gly Cys Cys Asn Gly Gly Asn Ala Ala
115 120 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
130 135 140

Gly Gly Asn Ala Thr His Ala Thr His Thr Ala Tyr Cys Cys Asn Gly
145 150 155 160

Ala Tyr Gly Ala Tyr Trp Ser Asn Gly Ala Tyr Gly Cys Asn Met Gly
165 170 175

Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn Thr Thr Tyr
180 185 190

Cys Ala Arg Gly Gly Asn Cys Ala Arg Gly Thr Asn Cys Ala Asn Ala
195 200 205

Thr His Trp Ser Asn Gly Cys Asn Gly Ala Tyr Ala Ala Arg Trp Ser
210 215 220

Asn Ala Thr His Ala Ala Tyr Cys Ala Asn Gly Cys Asn Thr Ala Tyr

225 230 235 240

Tyr Thr Asn Cys Ala Arg Thr Gly Gly Trp Ser Asn Trp Ser Asn Tyr
245 250 255

Thr Asn Ala Ala Arg Gly Cys Asn Trp Ser Asn Gly Ala Tyr Cys Ala
260 265 270

Asn Gly Cys Asn Ala Thr Gly Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
275 280 285

Gly Cys Asn Met Gly Asn Cys Ala Arg Gly Gly Asn Thr Ala Tyr Gly
290 295 300

Gly Asn Trp Ser Asn Gly Gly Asn Thr Gly Gly Gly Gly Asn Thr Ala
305 310 315 320

Tyr Thr Thr Tyr Gly Ala Tyr Thr Ala Tyr Thr Gly Gly Gly Gly Asn
325 330 335

Cys Ala Arg Gly Gly Asn Cys Ala Asn Tyr Thr Asn Gly Thr Asn Cys
340 345 350

Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
355 360

<210> 701
<211> 381
<212> PRT
<213> Homo Sapiens

<400> 701

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
20 25 30

Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Ala Arg
35 40 45

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Thr
50 55 60

Gly Tyr Ala Ala Arg Gly Gly Asn Trp Ser Asn Gly Gly Asn Thr Ala
65 70 75 80

Tyr Trp Ser Asn Thr Thr Tyr Cys Ala Asn Trp Ser Asn Thr Ala Tyr
85 90 95

Thr Gly Gly Ala Thr His Gly Gly Asn Thr Gly Gly Gly Thr Asn Met
100 105 110

```
Gly Asn Cys Ala Arg Ala Thr Gly Cys Cys Asn Gly Gly Asn Ala Ala
        115                 120                 125

Arg Gly Gly Asn Tyr Thr Asn Gly Ala Arg Thr Gly Gly Ala Thr Gly
    130                 135                 140

Gly Gly Asn Ala Thr His Ala Thr His Thr Ala Tyr Cys Cys Asn Gly
145                 150                 155                 160

Gly Asn Gly Ala Tyr Trp Ser Asn Gly Ala Tyr Ala Thr His Met Gly
                165                 170                 175

Asn Thr Ala Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn Thr Thr Tyr
            180                 185                 190

Cys Ala Arg Gly Gly Asn Cys Ala Arg Gly Thr Asn Cys Ala Asn Ala
        195                 200                 205

Thr His Trp Ser Asn Gly Cys Asn Gly Ala Tyr Ala Ala Arg Trp Ser
    210                 215                 220

Asn Ala Thr His Trp Ser Asn Cys Ala Asn Gly Cys Asn Thr Ala Tyr
225                 230                 235                 240

Tyr Thr Asn Cys Ala Arg Thr Gly Gly Trp Ser Asn Trp Ser Asn Tyr
                245                 250                 255

Thr Asn Ala Ala Arg Gly Cys Asn Trp Ser Asn Gly Ala Tyr Cys Ala
            260                 265                 270

Asn Gly Cys Asn Ala Thr Gly Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
        275                 280                 285

Gly Cys Asn Met Gly Asn Cys Ala Arg Gly Gly Asn Tyr Thr Asn Gly
    290                 295                 300

Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly Asn Cys Ala Asn Trp Ser
305                 310                 315                 320

Asn Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr
                325                 330                 335

Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly
            340                 345                 350

Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys Ala Asn Gly Thr
        355                 360                 365

Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn
    370                 375                 380
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<210> 702
<211> 375
<212> PRT
<213> Homo Sapiens

<400> 702

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Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Cys
1               5                  10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Ala Thr His Trp Ser Asn Gly Gly Asn Gly Ala
65                  70                  75                  80

Tyr Trp Ser Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Thr Ala Tyr
                85                  90                  95

Trp Ser Asn Gly Cys Asn Gly Cys Asn Thr Gly Gly Ala Ala Tyr Thr
            100                 105                 110

Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Trp Ser Asn Cys Cys
        115                 120                 125

Asn Trp Ser Asn Met Gly Asn Gly Gly Asn Tyr Thr Asn Gly Ala Arg
    130                 135                 140

Thr Gly Gly Tyr Thr Asn Gly Gly Asn Met Gly Asn Cys Ala Asn Thr
145                 150                 155                 160

Ala Tyr Thr Gly Tyr Met Gly Asn Trp Ser Asn Ala Ala Arg Thr Gly
                165                 170                 175

Gly Thr Ala Tyr Ala Ala Tyr Gly Ala Tyr Thr Ala Tyr Gly Cys Asn
            180                 185                 190

Gly Thr Asn Trp Ser Asn Gly Thr Asn Ala Ala Arg Trp Ser Asn Met
        195                 200                 205

Gly Asn Ala Thr His Cys Ala Asn Ala Thr His Ala Ala Tyr Cys Cys
    210                 215                 220

Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala Tyr
225                 230                 235                 240
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```
Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Cys Ala Arg Tyr
                245                 250                 255

Thr Asn Ala Ala Tyr Trp Ser Asn Gly Thr Asn Cys Ala Asn Cys Cys
            260                 265                 270

Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr Asn
        275                 280                 285

Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn Gly
    290                 295                 300

Ala Tyr Met Gly Asn Gly Cys Asn Gly Thr Asn Gly Cys Asn Gly Gly
305                 310                 315                 320

Asn Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly
                325                 330                 335

Gly Ala Tyr Gly Thr Asn Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly
            340                 345                 350

Gly Asn Cys Ala Asn Cys Ala Asn Gly Thr Asn Cys Ala Asn Gly Thr
        355                 360                 365

Asn Trp Ser Asn Trp Ser Asn
    370                 375
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<210> 703
<211> 324
<212> DNA
<213> Homo Sapiens

<400> 703
cgaactgtgg ctgcaccatc tgtcttcatc ttcccgccat ctgatgagca gttgaaatct 60

ggaactgcta gcgttgtgtg cctgctgaat aacttctatc ccagagaggc caaagtacag 120

tggaaggtgg ataacgccct ccaatcgggt aactcccagg agagtgtcac agagcaggac 180

agcaaggaca gcacctacag cctcagcagc accctgacgc tgagcaaagc agactacgag 240

aaacacaaag tctacgcctg cgaagtcacc catcagggcc tgagctcgcc cgtcacaaag 300

agcttcaaca ggggagagtg ttag 324

<210> 704
<211> 981
<212> DNA
<213> Homo Sapiens

<400> 704
gcctccacca agggcccatc ggtcttcccc ctggcgccct gctctagaag cacctccgag 60

agcacagcgg ccctgggctg cctggtcaag gactacttcc ccgaaccggt gacggtgtcg 120

tggaactcag gcgctctgac cagcggcgtg cacaccttcc cagctgtcct acagtcctca 180

ggactctact ccctcagcag cgtggtgacc gtgccctcca gcaacttcgg cacccagacc 240

tacacatgca acgtagatca caagcccagc aacaccaagg tggacaagac agttgagcgc 300

aaatgttgtg tcgagtgccc accgtgccca gcaccacctg tggcaggacc gtcagtcttc 360

ctcttccccc caaaacccaa ggacaccctc atgatctccc ggacccctga ggtcacgtgc 420

gtggtggtgg acgtgagcca cgaagacccc gaggtccagt tcaactggta cgtggacggc 480

gtggaggtgc ataatgccaa gacaaagcca cgggaggagc agttcaacag cacgttccgt 540

gtggtcagcg tcctcaccgt tgtgcaccag gactggctga acggcaagga gtacaagtgc 600

aaggtctcca acaaaggcct cccagccccc atcgagaaaa ccatctccaa aaccaaaggg 660

cagccccgag aaccacaggt gtacaccctg cccccatccc gggaggagat gaccaagaac 720

caggtcagcc tgacctgcct ggtcaaaggc ttctacccca gcgacatcgc cgtggagtgg 780

gagagcaatg ggcagccgga gaacaactac aagaccacac ctcccatgct ggactccgac 840

ggctccttct tcctctacag caagctcacc gtggacaaga gcaggtggca gcaggggaac 900

gtcttctcat gctccgtgat gcatgaggct ctgcacaacc actacacgca gaagagcctc 960

tccctgtctc cgggtaaatg a 981

<210> 705
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 705

Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Tyr
1 5 10 15

Thr Asn Gly Thr Asn Thr Ala Tyr Trp Ser Asn Gly Ala Tyr Gly Gly
20 25 30

Asn Ala Ala Tyr Cys Ala Asn Thr Ala Tyr Tyr Thr Asn Ala Ala Tyr
35 40 45

<210> 706
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 706

Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Tyr
1 5 10 15

Thr Asn Tyr Thr Asn Cys Ala Tyr Trp Ser Asn Gly Ala Tyr Gly Gly
20 25 30

Asn Ala Ala Arg Cys Ala Asn Thr Ala Tyr Tyr Thr Asn Thr Ala Tyr
35 40 45

<210> 707

<211> 33
<212> PRT
<213> Homo Sapiens

<400> 707

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Gly Gly Asn Ala
1 5 10 15

Thr His Gly Cys Asn Ala Ala Tyr Thr Ala Tyr Tyr Thr Asn Gly Cys
20 25 30

Asn

<210> 708
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 708

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Gly Gly Asn Ala
1 5 10 15

Thr His Trp Ser Asn Ala Ala Tyr Gly Ala Tyr Tyr Thr Asn Gly Cys
20 25 30

Asn

<210> 709
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 709

Met Gly Asn Trp Ser Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Tyr
1 5 10 15

Thr Asn Gly Thr Asn Cys Ala Tyr Trp Ser Asn Gly Ala Tyr Gly Gly
20 25 30

Asn Ala Ala Tyr Cys Ala Asn Thr Ala Tyr Tyr Thr Asn Trp Ser Asn
35 40 45

<210> 710
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 710

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Cys Ala Asn Gly
1 5 10 15

Thr Asn Ala Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr Tyr Thr

20 25 30

Asn Gly Cys Asn
35

<210> 711
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 711

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Gly
1 5 10 15

Thr Asn Trp Ser Asn Met Gly Asn Tyr Thr Asn Gly Cys Asn
20 25 30

<210> 712
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 712

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Gly Gly Asn Ala
1 5 10 15

Thr His Met Gly Asn Ala Ala Tyr Gly Ala Tyr Tyr Thr Asn Gly Gly
20 25 30

Asn

<210> 713
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 713

Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Gly
1 5 10 15

Thr Asn Tyr Thr Asn Thr Ala Tyr Trp Ser Asn Trp Ser Asn Ala Ala
20 25 30

Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr Ala Tyr Tyr Thr Asn
35 40 45

Gly Thr Asn
50

<210> 714
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 714

Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Gly
1 5 10 15

Thr Asn Tyr Thr Asn Thr Ala Tyr Trp Ser Asn Trp Ser Asn Ala Ala
20 25 30

Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr Ala Tyr Tyr Thr Asn
35 40 45

Gly Cys Asn
50

<210> 715
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 715

Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala Arg Ala Ala Tyr Gly
1 5 10 15

Thr Asn Tyr Thr Asn Thr Ala Tyr Trp Ser Asn Trp Ser Asn Ala Ala
20 25 30

Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr Ala Tyr Tyr Thr Asn
35 40 45

Gly Cys Asn
50

<210> 716
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 716

Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Gly
1 5 10 15

Thr Asn Tyr Thr Asn Thr Ala Tyr Ala Ala Tyr Trp Ser Asn Ala Ala
20 25 30

Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr Ala Tyr Tyr Thr Asn
35 40 45

Gly Cys Asn
50

<210> 717
<211> 51
<212> PRT

<213> Homo Sapiens

<400> 717

Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Gly
1 5 10 15

Thr Asn Tyr Thr Asn Gly Ala Tyr Trp Ser Asn Trp Ser Asn Ala Ala
20 25 30

Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr Ala Tyr Tyr Thr Asn
35 40 45

Gly Cys Asn
50

<210> 718
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 718

Ala Ala Arg Trp Ser Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Ala
1 5 10 15

Thr His Tyr Thr Asn Thr Ala Tyr Met Gly Asn Trp Ser Asn Ala Ala
20 25 30

Tyr Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr Ala Tyr Tyr Thr Asn
35 40 45

Gly Cys Asn
50

<210> 719
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 719

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Gly Ala Tyr Ala
1 5 10 15

Thr His Trp Ser Asn Cys Ala Tyr Thr Ala Tyr Tyr Thr Asn Gly Cys
20 25 30

Asn

<210> 720
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 720

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Gly Ala Tyr Ala
1   5   10   15

Thr His Trp Ser Asn Ala Ala Tyr Thr Ala Tyr Tyr Thr Asn Gly Cys
            20   25   30

Asn

<210> 721
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 721

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Gly
1   5   10   15

Thr Asn Trp Ser Asn Trp Ser Asn Ala Ala Tyr Tyr Thr Asn Gly Cys
            20   25   30

Asn

<210> 722
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 722

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Gly Ala Tyr Ala
1   5   10   15

Thr His Trp Ser Asn Met Gly Asn Thr Gly Gly Tyr Thr Asn Gly Cys
            20   25   30

Asn

<210> 723
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 723

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Ala
1   5   10   15

Thr His Trp Ser Asn Cys Ala Asn Thr Ala Tyr Tyr Thr Asn Ala Ala
            20   25   30

Tyr

<210> 724
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 724

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Cys Ala Asn Ala
1 5 10 15

Thr His Trp Ser Asn Ala Thr His Thr Ala Tyr Tyr Thr Asn Ala Ala
20 25 30

Tyr

<210> 725
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 725

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Ala
1 5 10 15

Thr His Met Gly Asn Trp Ser Asn Thr Ala Tyr Tyr Thr Asn Ala Ala
20 25 30

Tyr

<210> 726
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 726

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Cys Ala Asn Ala
1 5 10 15

Thr His Trp Ser Asn Met Gly Asn Thr Ala Tyr Tyr Thr Asn Ala Ala
20 25 30

Tyr

<210> 727
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 727

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Met Gly Asn Ala
1 5 10 15

Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr Tyr Thr Asn Ala Ala
20 25 30

Tyr

<210> 728
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 728

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Ala
1 5 10 15

Thr His Trp Ser Asn Met Gly Asn Thr Ala Tyr Tyr Thr Asn Ala Ala
20 25 30

Tyr

<210> 729
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 729

Met Gly Asn Gly Cys Asn Trp Ser Asn Cys Ala Arg Trp Ser Asn Ala
1 5 10 15

Thr His Trp Ser Asn Trp Ser Asn Thr Ala Tyr Tyr Thr Asn Ala Ala
20 25 30

Tyr

<210> 730
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 730

Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala Arg Gly Ala Tyr Ala
1 5 10 15

Thr His Trp Ser Asn Ala Ala Tyr Thr Ala Tyr Tyr Thr Asn Ala Ala
20 25 30

Tyr

<210> 731

<211> 33
<212> PRT
<213> Homo Sapiens

<400> 731

Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala Arg Gly Ala Tyr Ala
1 5 10 15

Thr His Trp Ser Asn Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Ala Ala
20 25 30

Tyr

<210> 732
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 732

Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala Arg Gly Ala Tyr Ala
1 5 10 15

Thr His Trp Ser Asn Gly Ala Tyr Thr Ala Tyr Tyr Thr Asn Ala Ala
20 25 30

Tyr

<210> 733
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 733

Cys Ala Arg Gly Cys Asn Trp Ser Asn Cys Ala Arg Gly Ala Tyr Ala
1 5 10 15

Thr His Cys Ala Asn Ala Ala Tyr Thr Ala Tyr Tyr Thr Asn Ala Ala
20 25 30

Tyr

<210> 734
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 734

Ala Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Thr Gly Gly Gly
1 5 10 15

Ala Tyr Trp Ser Asn

20

<210> 735
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 735

Gly Ala Arg Gly Thr Asn Trp Ser Asn Ala Ala Tyr Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn
20

<210> 736
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 736

Gly Thr Asn Gly Cys Asn Trp Ser Asn Cys Ala Asn Tyr Thr Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn
20

<210> 737
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 737

Gly Cys Asn Gly Cys Asn Trp Ser Asn Cys Ala Asn Tyr Thr Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn
20

<210> 738
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 738

Ala Ala Arg Ala Thr His Trp Ser Asn Ala Ala Tyr Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn
20

<210> 739
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 739

Gly Gly Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Met Gly Asn Gly
1 5 10 15

Cys Asn Cys Ala Asn
20

<210> 740
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 740

Gly Gly Asn Gly Cys Asn Trp Ser Asn Met Gly Asn Met Gly Asn Gly
1 5 10 15

Cys Asn Cys Ala Asn
20

<210> 741
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 741

Gly Cys Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn
20

<210> 742
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 742

Thr Gly Gly Gly Cys Asn Trp Ser Asn Cys Ala Asn Met Gly Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn
20

<210> 743
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 743

Thr Gly Gly Gly Cys Asn Trp Ser Asn Cys Ala Asn Met Gly Asn Ala
1 5 10 15

Ala Arg Trp Ser Asn
20

<210> 744
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 744

Thr Gly Gly Gly Cys Asn Trp Ser Asn Gly Cys Asn Met Gly Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn
20

<210> 745
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 745

Gly Cys Asn Gly Ala Arg Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn
20

<210> 746
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 746

Cys Ala Asn Gly Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn
20

<210> 747
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 747

Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser Asn Tyr Thr Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn
20

<210> 748
<211> 21
<212> PRT
<213> Homo Sapiens

<400> 748

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Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Ala Tyr Tyr Thr Asn Gly
1               5                   10                  15


Ala Arg Cys Ala Asn
            20


<210>  749
<211>  21
<212>  PRT
<213>  Homo Sapiens

<400>  749

Gly Ala Tyr Gly Cys Asn Trp Ser Asn Ala Thr His Tyr Thr Asn Gly
1               5                   10                  15


Ala Arg Cys Ala Asn
            20


<210>  750
<211>  27
<212>  PRT
<213>  Homo Sapiens

<400>  750

Ala Thr Gly Cys Ala Arg Trp Ser Asn Cys Ala Asn Cys Ala Tyr Thr
1               5                   10                  15


Gly Gly Cys Cys Asn Ala Thr His Cys Ala Asn
            20                  25


<210>  751
<211>  27
<212>  PRT
<213>  Homo Sapiens

<400>  751

Ala Thr His Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys Ala Tyr Thr
1               5                   10                  15


Gly Gly Cys Cys Asn Cys Ala Asn Cys Ala Asn
            20                  25


<210>  752
<211>  27
<212>  PRT
<213>  Homo Sapiens

<400>  752

Ala Thr Gly Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys Ala Tyr Thr
1               5                   10                  15


Gly Gly Cys Cys Asn Ala Thr His Cys Ala Asn
            20                  25
```

<210> 753
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 753

Ala Thr Gly Cys Ala Arg Gly Gly Asn Ala Thr His Cys Ala Arg Tyr
1 5 10 15

Thr Asn Cys Cys Asn Thr Gly Tyr Trp Ser Asn
20 25

<210> 754
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 754

Ala Thr Gly Cys Ala Arg Trp Ser Asn Ala Thr His Cys Ala Arg Tyr
1 5 10 15

Thr Asn Cys Cys Asn Tyr Thr Asn Cys Ala Asn
20 25

<210> 755
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 755

Ala Thr Gly Cys Ala Arg Trp Ser Asn Ala Thr His Cys Ala Arg Tyr
1 5 10 15

Thr Asn Cys Cys Asn Ala Thr His Cys Ala Asn
20 25

<210> 756
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 756

Cys Ala Arg Ala Ala Tyr Thr Ala Tyr Ala Ala Tyr Trp Ser Asn Gly
1 5 10 15

Cys Asn Cys Cys Asn Thr Thr Tyr Cys Ala Asn
20 25

<210> 757
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 757

Cys Ala Arg Ala Ala Arg Thr Ala Tyr Ala Ala Tyr Trp Ser Asn Gly
1   5   10   15

Thr Asn Cys Cys Asn Tyr Thr Asn Cys Ala Asn
            20   25

<210> 758
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 758

Ala Thr Gly Cys Ala Arg Gly Cys Asn Cys Ala Asn Cys Ala Arg Thr
1   5   10   15

Thr Tyr Cys Cys Asn Cys Ala Tyr Cys Ala Asn
            20   25

<210> 759
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 759

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Gly Gly Asn Trp Ser Asn Trp
1   5   10   15

Ser Asn Cys Cys Asn Met Gly Asn Cys Ala Asn
            20   25

<210> 760
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 760

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Gly Gly Asn Trp Ser Asn Trp
1   5   10   15

Ser Asn Cys Cys Asn Met Gly Asn Trp Ser Asn
            20   25

<210> 761
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 761

Tyr Thr Asn Cys Ala Arg Cys Ala Tyr Ala Ala Tyr Trp Ser Asn Thr
1   5   10   15

Ala Tyr Cys Cys Asn Cys Cys Asn Cys Ala Asn
            20   25

<210> 762
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 762

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Thr
1 5 10 15

Thr Tyr Cys Cys Asn Thr Gly Gly Cys Ala Asn
20 25

<210> 763
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 763

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Cys
1 5 10 15

Ala Asn Cys Ala Asn Thr Gly Gly Cys Ala Asn
20 25

<210> 764
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 764

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Cys
1 5 10 15

Ala Asn Cys Cys Asn Met Gly Asn Cys Ala Asn
20 25

<210> 765
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 765

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Ala
1 5 10 15

Thr His Trp Ser Asn Met Gly Asn Cys Ala Asn
20 25

<210> 766
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 766

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Cys

1 5 10 15

Ala Asn Ala Thr Gly Thr Thr Tyr Trp Ser Asn
20 25

<210> 767
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 767

Cys Ala Tyr Cys Ala Arg Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Cys
1 5 10 15

Ala Asn Cys Cys Asn Tyr Thr Asn Cys Ala Asn
20 25

<210> 768
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 768

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Thr Thr Tyr Ala Thr His Cys
1 5 10 15

Ala Asn Cys Cys Asn Tyr Thr Asn Cys Ala Asn
20 25

<210> 769
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 769

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Ala Ala Tyr Ala Ala Tyr Thr
1 5 10 15

Ala Tyr Cys Cys Asn Thr Thr Tyr Cys Ala Asn
20 25

<210> 770
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 770

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Ala Ala Tyr Cys Ala Asn Thr
1 5 10 15

Ala Tyr Cys Cys Asn Thr Thr Tyr Cys Ala Asn
20 25

<210> 771

<211> 30
<212> PRT
<213> Homo Sapiens

<400> 771

Cys Ala Arg Cys Ala Arg Cys Ala Tyr Ala Ala Tyr Ala Ala Tyr Thr
1 5 10 15

Gly Gly Cys Cys Asn Cys Cys Asn Thr Gly Gly Cys Ala Asn
20 25 30

<210> 772
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 772

Cys Ala Arg Cys Ala Arg Gly Cys Asn Ala Ala Tyr Trp Ser Asn Thr
1 5 10 15

Thr Tyr Cys Cys Asn Cys Cys Asn Cys Ala Asn
20 25

<210> 773
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 773

Cys Ala Arg Cys Ala Arg Trp Ser Asn Cys Ala Tyr Trp Ser Asn Gly
1 5 10 15

Cys Asn Cys Cys Asn Thr Thr Tyr Cys Ala Asn
20 25

<210> 774
<211> 24
<212> PRT
<213> Homo Sapiens

<400> 774

Cys Ala Arg Cys Ala Arg Trp Ser Asn Thr Ala Tyr Trp Ser Asn Cys
1 5 10 15

Ala Asn Tyr Thr Asn Cys Ala Asn
20

<210> 775
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 775

Cys Ala Arg Cys Ala Arg Trp Ser Asn Thr Ala Tyr Trp Ser Asn Ala
1 5 10 15

Thr His Cys Cys Asn Tyr Thr Asn Cys Ala Asn
            20   25

<210> 776
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 776

Cys Ala Arg Cys Ala Arg Ala Thr His Thr Ala Tyr Trp Ser Asn Cys
1   5   10   15

Ala Asn Trp Ser Asn Ala Thr His Cys Ala Asn
            20   25

<210> 777
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 777

Cys Ala Arg Cys Ala Arg Trp Ser Asn Thr Ala Tyr Ala Thr His Cys
1   5   10   15

Ala Asn Cys Cys Asn Ala Thr His Cys Ala Asn
            20   25

<210> 778
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 778

Cys Ala Arg Cys Ala Arg Trp Ser Asn Thr Ala Tyr Thr Thr Tyr Cys
1   5   10   15

Ala Asn Cys Cys Asn Ala Thr His Cys Ala Asn
            20   25

<210> 779
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 779

Cys Ala Arg Cys Ala Arg Trp Ser Asn Thr Ala Tyr Thr Thr Tyr Trp
1   5   10   15

Ser Asn Cys Cys Asn Ala Thr His Cys Ala Asn
            20   25

<210> 780
<211> 27

<212> PRT
<213> Homo Sapiens

<400> 780

Cys Ala Arg Cys Ala Arg Trp Ser Asn Thr Thr Tyr Thr Ala Tyr Cys
1 5 10 15

Ala Asn Cys Cys Asn Ala Thr His Cys Ala Asn
20 25

<210> 781
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 781

Cys Ala Arg Cys Ala Arg Trp Ser Asn Thr Thr Tyr Thr Ala Tyr Gly
1 5 10 15

Cys Asn Cys Cys Asn Ala Thr His Cys Ala Asn
20 25

<210> 782
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 782

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Gly Ala Tyr Thr Ala Tyr Tyr
1 5 10 15

Thr Asn Cys Cys Asn Thr Thr Tyr Cys Ala Asn
20 25

<210> 783
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 783

Cys Ala Arg Cys Ala Arg Thr Gly Tyr Gly Ala Tyr Gly Ala Tyr Tyr
1 5 10 15

Thr Asn Cys Cys Asn Tyr Thr Asn Cys Ala Asn
20 25

<210> 784
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 784

Cys Ala Arg Cys Ala Tyr Thr Ala Tyr Gly Ala Tyr Ala Ala Tyr Tyr
1 5 10 15

Thr Asn Cys Cys Asn Tyr Thr Asn Cys Ala Asn
            20   25

<210> 785
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 785

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Gly Ala Tyr Ala Ala Tyr Tyr
1   5   10   15

Thr Asn Cys Cys Asn Tyr Thr Asn Cys Ala Asn
            20   25

<210> 786
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 786

Cys Ala Arg Cys Ala Arg Thr Gly Tyr Gly Ala Tyr Ala Thr His Tyr
1   5   10   15

Thr Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn
            20   25

<210> 787
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 787

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Gly Ala Tyr Ala Ala Tyr Tyr
1   5   10   15

Thr Asn Cys Cys Asn Tyr Thr Asn Gly Cys Asn
            20   25

<210> 788
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 788

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Gly Ala Tyr Trp Ser Asn Tyr
1   5   10   15

Thr Asn Cys Cys Asn Ala Thr His Cys Ala Asn
            20   25

<210> 789
<211> 27
<212> PRT

<213> Homo Sapiens

<400> 789

Cys Ala Arg Cys Ala Arg Thr Ala Tyr Gly Ala Tyr Ala Ala Tyr Tyr
1 5 10 15

Thr Asn Cys Cys Asn Ala Thr His Cys Ala Asn
20 25

<210> 790
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 790

Cys Ala Arg Cys Ala Tyr Thr Ala Tyr Gly Ala Tyr Ala Ala Tyr Tyr
1 5 10 15

Thr Asn Cys Cys Asn Ala Thr His Cys Ala Asn
20 25

<210> 791
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 791

Gly Gly Asn Thr Ala Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Trp
1 5 10 15

Ser Asn Thr Ala Tyr Gly Gly Asn Ala Thr His Trp Ser Asn
20 25 30

<210> 792
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 792

Gly Gly Asn Thr Ala Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Gly
1 5 10 15

Gly Asn Cys Ala Tyr Thr Ala Tyr Ala Thr Gly Cys Ala Tyr
20 25 30

<210> 793
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 793

Gly Gly Asn Thr Ala Tyr Cys Ala Asn Thr Thr Tyr Cys Ala Asn Gly
1 5 10 15

Gly Asn Thr Ala Tyr Thr Ala Tyr Ala Thr Gly Cys Ala Tyr
            20   25   30

<210> 794
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 794

Gly Gly Asn Thr Ala Tyr Cys Ala Asn Tyr Thr Asn Cys Ala Asn Gly
1   5   10   15

Ala Arg Tyr Thr Asn Trp Ser Asn Ala Thr Gly Cys Ala Tyr
            20   25   30

<210> 795
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 795

Gly Gly Asn Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Trp Ser Asn Ala
1   5   10   15

Ala Tyr Gly Cys Asn Met Gly Asn Ala Thr Gly Gly Gly Asn Gly Thr
            20   25   30

Asn Trp Ser Asn
        35

<210> 796
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 796

Gly Gly Asn Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Trp Ser Asn Cys
1   5   10   15

Ala Asn Gly Gly Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr
            20   25   30

Asn Gly Gly Asn
        35

<210> 797
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 797

Gly Gly Asn Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Ala Ala Tyr Cys
1   5   10   15

Ala Asn Gly Gly Asn Gly Gly Asn Gly Thr Asn Gly Gly Asn Gly Thr
20 25 30

Asn Gly Gly Asn
35

<210> 798
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 798

Gly Gly Asn Thr Thr Tyr Cys Cys Asn Thr Thr Tyr Trp Ser Asn Met
1 5 10 15

Gly Asn Thr Ala Tyr Trp Ser Asn Ala Thr Gly Ala Ala Tyr
20 25 30

<210> 799
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 799

Gly Gly Asn Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp
1 5 10 15

Ser Asn Thr Ala Tyr Gly Cys Asn Ala Thr Gly Ala Ala Tyr
20 25 30

<210> 800
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 800

Gly Gly Asn Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp
1 5 10 15

Ser Asn Thr Ala Tyr Gly Cys Asn Ala Thr Gly Trp Ser Asn
20 25 30

<210> 801
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 801

Gly Gly Asn Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp
1 5 10 15

Ser Asn Thr Ala Tyr Gly Gly Asn Ala Thr Gly Cys Ala Tyr
20 25 30

<210> 802
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 802

Gly Gly Asn Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp
1 5 10 15

Ser Asn Thr Ala Tyr Gly Ala Tyr Ala Thr Gly Cys Ala Tyr
20 25 30

<210> 803
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 803

Gly Gly Asn Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Met Gly Asn Trp
1 5 10 15

Ser Asn Cys Ala Tyr Gly Gly Asn Ala Thr Gly Cys Ala Tyr
20 25 30

<210> 804
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 804

Gly Gly Asn Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Gly
1 5 10 15

Cys Asn Thr Ala Tyr Trp Ser Asn Ala Thr Gly Ala Ala Tyr
20 25 30

<210> 805
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 805

Gly Gly Asn Thr Thr Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp
1 5 10 15

Ser Asn Thr Ala Tyr Trp Ser Asn Ala Thr Gly Ala Ala Tyr
20 25 30

<210> 806
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 806

Gly Gly Asn Gly Gly Asn Trp Ser Asn Gly Thr Asn Trp Ser Asn Trp

1 5 10 15

Ser Asn Gly Gly Asn Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly
20 25 30

Gly Trp Ser Asn
35

<210> 807
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 807

Gly Gly Asn Gly Gly Asn Trp Ser Asn Ala Thr His Trp Ser Asn Met
1 5 10 15

Gly Asn Gly Gly Asn Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly
20 25 30

Gly Trp Ser Asn
35

<210> 808
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 808

Gly Gly Asn Gly Gly Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp
1 5 10 15

Ser Asn Gly Gly Asn Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly
20 25 30

Gly Trp Ser Asn
35

<210> 809
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 809

Gly Gly Asn Gly Gly Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp
1 5 10 15

Ser Asn Gly Gly Asn Gly Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Gly
20 25 30

Gly Ala Ala Tyr
35

<210> 810
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 810

Gly Gly Asn Gly Gly Asn Trp Ser Asn Thr Thr Tyr Trp Ser Asn Gly
1 5 10 15

Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn
20 25 30

<210> 811
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 811

Gly Gly Asn Gly Gly Asn Trp Ser Asn Ala Thr His Trp Ser Asn Trp
1 5 10 15

Ser Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Gly Trp Ser Asn
20 25 30

<210> 812
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 812

Gly Gly Asn Gly Gly Asn Trp Ser Asn Gly Thr Asn Trp Ser Asn Trp
1 5 10 15

Ser Asn Gly Gly Asn Gly Gly Asn Trp Ser Asn Thr Ala Tyr Thr Gly
20 25 30

Gly Trp Ser Asn
35

<210> 813
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 813

Gly Gly Asn Thr Ala Tyr Met Gly Asn Thr Thr Tyr Cys Ala Asn Trp
1 5 10 15

Ser Asn Thr Ala Tyr Thr Gly Gly Ala Thr His Gly Gly Asn
20 25 30

<210> 814
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 814

```
Gly Gly Asn Thr Ala Tyr Trp Ser Asn Thr Thr Tyr Cys Ala Asn Trp
1               5                   10                  15

Ser Asn Thr Ala Tyr Thr Gly Gly Ala Thr His Gly Gly Asn
            20                  25                  30
```

<210> 815
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 815

```
Gly Gly Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Trp Ser Asn Trp
1               5                   10                  15

Ser Asn Thr Ala Tyr Trp Ser Asn Gly Cys Asn Gly Cys Asn Thr Gly
            20                  25                  30

Gly Ala Ala Tyr
        35
```

<210> 816
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 816

```
Thr Gly Gly Ala Thr His Trp Ser Asn Gly Cys Asn Trp Ser Asn Ala
1               5                   10                  15

Ala Tyr Gly Gly Asn Ala Ala Tyr Cys Ala Asn Ala Ala Tyr Thr Ala
            20                  25                  30

Tyr Gly Cys Asn Cys Ala Arg Ala Ala Arg Tyr Thr Asn Cys Ala Arg
        35                  40                  45

Gly Ala Tyr
    50
```

<210> 817
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 817

```
Thr Gly Gly Ala Thr His Ala Ala Tyr Cys Cys Asn Ala Ala Tyr Trp
1               5                   10                  15

Ser Asn Gly Gly Asn Gly Gly Asn Cys Ala Asn Ala Ala Tyr Thr Gly
            20                  25                  30
```

Tyr Gly Cys Asn Cys Ala Arg Ala Ala Arg Thr Thr Tyr Cys Ala Arg
        35   40   45

Gly Gly Asn
    50

<210> 818
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 818

Thr Gly Gly Ala Thr His Ala Ala Tyr Cys Cys Asn Ala Ala Tyr Trp
1   5   10   15

Ser Asn Gly Gly Asn Gly Gly Asn Cys Ala Asn Ala Ala Tyr Cys Ala
            20   25   30

Tyr Cys Ala Asn Cys Ala Arg Ala Ala Arg Thr Thr Tyr Cys Ala Arg
        35   40   45

Gly Gly Asn
    50

<210> 819
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 819

Trp Ser Asn Thr Thr Tyr Gly Ala Tyr Cys Cys Asn Gly Ala Arg Gly
1   5   10   15

Ala Tyr Gly Gly Asn Gly Ala Arg Cys Ala Asn Ala Thr His Thr Ala
            20   25   30

Tyr Gly Cys Asn Cys Ala Arg Ala Ala Arg Thr Thr Tyr Cys Ala Arg
        35   40   45

Gly Gly Asn
    50

<210> 820
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 820

Cys Ala Tyr Ala Thr His Thr Thr Tyr Trp Ser Asn Ala Ala Tyr Gly
1   5   10   15

Ala Tyr Gly Ala Arg Ala Ala Arg Trp Ser Asn Thr Ala Tyr Trp Ser
            20   25   30

```
Asn Cys Ala Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Trp Ser Asn
        35                  40                  45


<210>  821
<211>  48
<212>  PRT
<213>  Homo Sapiens

<400>  821

Tyr Thr Asn Ala Thr His Thr Thr Tyr Trp Ser Asn Ala Ala Tyr Gly
1               5                   10                  15


Ala Tyr Gly Ala Arg Ala Ala Arg Trp Ser Asn Thr Ala Tyr Trp Ser
            20                  25                  30


Asn Cys Ala Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Trp Ser Asn
        35                  40                  45


<210>  822
<211>  48
<212>  PRT
<213>  Homo Sapiens

<400>  822

Tyr Thr Asn Ala Thr His Thr Ala Tyr Thr Gly Gly Ala Ala Tyr Gly
1               5                   10                  15


Ala Tyr Gly Ala Tyr Ala Ala Arg Met Gly Asn Thr Ala Tyr Trp Ser
            20                  25                  30


Asn Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Trp Ser Asn
        35                  40                  45


<210>  823
<211>  48
<212>  PRT
<213>  Homo Sapiens

<400>  823

Tyr Thr Asn Ala Thr His Thr Ala Tyr Thr Gly Gly Ala Ala Tyr Gly
1               5                   10                  15


Thr Asn Gly Ala Arg Ala Ala Arg Met Gly Asn Thr Ala Tyr Trp Ser
            20                  25                  30


Asn Cys Cys Asn Trp Ser Asn Tyr Thr Asn Met Gly Asn Trp Ser Asn
        35                  40                  45


<210>  824
<211>  51
<212>  PRT
<213>  Homo Sapiens

<400>  824
```

Gly Cys Asn Ala Thr His Trp Ser Asn Trp Ser Asn Trp Ser Asn Trp
1 5 10 15

Ser Asn Trp Ser Asn Thr Ala Tyr Ala Thr His Thr Ala Tyr Thr Ala
20 25 30

Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Ala Ala Arg
35 40 45

Gly Gly Asn
50

<210> 825
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 825

Gly Cys Asn Ala Thr His Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly
1 5 10 15

Gly Asn Gly Gly Asn Trp Ser Asn Cys Ala Asn Thr Ala Tyr Thr Ala
20 25 30

Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Ala Ala Arg
35 40 45

Gly Gly Asn
50

<210> 826
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 826

Thr Thr Tyr Ala Thr His Trp Ser Asn Gly Ala Tyr Gly Ala Tyr Gly
1 5 10 15

Gly Asn Trp Ser Asn Cys Ala Asn Ala Ala Arg Thr Ala Tyr Thr Ala
20 25 30

Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Ala Ala Arg
35 40 45

Gly Gly Asn
50

<210> 827
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 827

Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly Ala Tyr Gly
1 5 10 15

Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Thr Ala Tyr Thr Ala
20 25 30

Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Ala Ala Arg
35 40 45

Gly Gly Asn
50

<210> 828
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 828

Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly Ala Tyr Gly
1 5 10 15

Gly Asn Trp Ser Asn Ala Thr His Ala Ala Arg Thr Ala Tyr Thr Ala
20 25 30

Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Ala Ala Arg
35 40 45

Gly Gly Asn
50

<210> 829
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 829

Gly Thr Asn Ala Thr His Thr Gly Gly Trp Ser Asn Gly Ala Tyr Gly
1 5 10 15

Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Thr Ala Tyr Thr Ala
20 25 30

Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Ala Ala Arg
35 40 45

Gly Gly Asn
50

<210> 830
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 830

Gly Thr Asn Ala Thr His Thr Gly Gly Gly Ala Tyr Gly Ala Tyr Gly
1 5 10 15

Gly Asn Trp Ser Asn Ala Ala Tyr Cys Ala Arg Thr Ala Tyr Thr Ala
20 25 30

Tyr Cys Ala Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Ala Ala Arg
35 40 45

Gly Gly Asn
50

<210> 831
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 831

Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly Ala Tyr Gly
1 5 10 15

Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Met Gly Asn Thr Ala
20 25 30

Tyr Gly Thr Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Ala Ala Arg
35 40 45

Gly Gly Asn
50

<210> 832
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 832

Gly Thr Asn Ala Thr His Thr Gly Gly Thr Ala Tyr Gly Ala Tyr Gly
1 5 10 15

Gly Asn Trp Ser Asn Ala Ala Tyr Ala Ala Arg Ala Ala Tyr Thr Ala
20 25 30

Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Met Gly Asn
35 40 45

Gly Gly Asn
50

<210> 833
<211> 51
<212> PRT

<213> Homo Sapiens

<400> 833

Thr Ala Tyr Ala Thr His Trp Ser Asn Trp Ser Asn Trp Ser Asn Gly
1 5 10 15

Gly Asn Met Gly Asn Cys Ala Asn Ala Thr His Thr Ala Tyr Thr Ala
20 25 30

Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Ala Ala Arg
35 40 45

Gly Gly Asn
50

<210> 834
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 834

Cys Ala Tyr Ala Thr His Trp Ser Asn Trp Ser Asn Trp Ser Asn Trp
1 5 10 15

Ser Asn Met Gly Asn Cys Ala Asn Ala Thr His Thr Ala Tyr Thr Ala
20 25 30

Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Ala Ala Arg
35 40 45

Gly Gly Asn
50

<210> 835
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 835

Cys Ala Tyr Ala Thr His Trp Ser Asn Met Gly Asn Trp Ser Asn Trp
1 5 10 15

Ser Asn Met Gly Asn Cys Ala Asn Ala Thr His Thr Ala Tyr Thr Ala
20 25 30

Tyr Gly Cys Asn Gly Ala Tyr Trp Ser Asn Gly Thr Asn Ala Ala Arg
35 40 45

Gly Gly Asn
50

<210> 836
<211> 48

<212> PRT
<213> Homo Sapiens

<400> 836

Thr Ala Tyr Ala Thr His Cys Ala Tyr Trp Ser Asn Trp Ser Asn Gly
1 5 10 15

Gly Asn Trp Ser Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Ala Ala
20 25 30

Tyr Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Trp Ser Asn
35 40 45

<210> 837
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 837

Thr Ala Tyr Ala Thr His Thr Ala Tyr Cys Ala Tyr Trp Ser Asn Gly
1 5 10 15

Gly Asn Trp Ser Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Ala Ala
20 25 30

Tyr Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Trp Ser Asn
35 40 45

<210> 838
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 838

Thr Ala Tyr Ala Thr His Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Gly
1 5 10 15

Gly Asn Trp Ser Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Ala Ala
20 25 30

Tyr Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Trp Ser Asn
35 40 45

<210> 839
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 839

Thr Ala Tyr Ala Thr His Cys Ala Tyr Thr Ala Tyr Trp Ser Asn Gly
1 5 10 15

Gly Asn Trp Ser Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Ala Ala
20 25 30

Tyr Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Trp Ser Asn
        35   40   45

<210> 840
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 840

Thr Ala Tyr Ala Thr His Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Gly
1   5   10   15

Gly Asn Gly Gly Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Ala Ala
            20   25   30

Tyr Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Trp Ser Asn
        35   40   45

<210> 841
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 841

Gly Ala Arg Ala Thr His Ala Ala Tyr Cys Ala Tyr Trp Ser Asn Gly
1   5   10   15

Gly Asn Trp Ser Asn Cys Ala Asn Ala Ala Tyr Thr Ala Tyr Ala Ala
            20   25   30

Tyr Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Trp Ser Asn
        35   40   45

<210> 842
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 842

Met Gly Asn Ala Thr His Thr Ala Tyr Cys Ala Asn Trp Ser Asn Gly
1   5   10   15

Gly Asn Cys Ala Asn Cys Ala Asn Ala Ala Tyr Thr Ala Tyr Ala Ala
            20   25   30

Tyr Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Trp Ser Asn
        35   40   45

<210> 843
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 843

Thr Ala Tyr Ala Thr His Thr Ala Tyr Thr Ala Tyr Trp Ser Asn Gly
1 5 10 15

Gly Asn Trp Ser Asn Cys Ala Asn Ala Ala Tyr Thr Ala Tyr Ala Ala
20 25 30

Tyr Cys Cys Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Trp Ser Asn
35 40 45

<210> 844
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 844

Ala Thr His Ala Thr His Thr Ala Tyr Cys Cys Asn Gly Ala Tyr Gly
1 5 10 15

Ala Tyr Trp Ser Asn Gly Ala Tyr Cys Ala Asn Met Gly Asn Thr Ala
20 25 30

Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn Thr Thr Tyr Cys Ala Arg
35 40 45

Gly Gly Asn
50

<210> 845
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 845

Ala Thr His Ala Thr His Thr Ala Tyr Cys Cys Asn Gly Ala Tyr Gly
1 5 10 15

Ala Tyr Trp Ser Asn Gly Ala Tyr Gly Cys Asn Met Gly Asn Thr Ala
20 25 30

Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn Thr Thr Tyr Cys Ala Arg
35 40 45

Gly Gly Asn
50

<210> 846
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 846

Ala Thr His Ala Thr His Thr Ala Tyr Cys Cys Asn Gly Gly Asn Gly

1 5 10 15

Ala Tyr Trp Ser Asn Gly Ala Tyr Ala Thr His Met Gly Asn Thr Ala
20 25 30

Tyr Trp Ser Asn Cys Cys Asn Trp Ser Asn Thr Thr Tyr Cys Ala Arg
35 40 45

Gly Gly Asn
50

<210> 847
<211> 54
<212> PRT
<213> Homo Sapiens

<400> 847

Met Gly Asn Cys Ala Asn Thr Ala Tyr Thr Gly Tyr Met Gly Asn Trp
1 5 10 15

Ser Asn Ala Ala Arg Thr Gly Gly Thr Ala Tyr Ala Ala Tyr Gly Ala
20 25 30

Tyr Thr Ala Tyr Gly Cys Asn Gly Thr Asn Trp Ser Asn Gly Thr Asn
35 40 45

Ala Ala Arg Trp Ser Asn
50

<210> 848
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 848

Gly Ala Arg Gly Ala Tyr Ala Ala Tyr Thr Gly Gly Ala Ala Tyr Thr
1 5 10 15

Ala Tyr Gly Gly Asn Thr Thr Tyr Thr Thr Tyr Gly Ala Tyr Thr Ala
20 25 30

Tyr

<210> 849
<211> 24
<212> PRT
<213> Homo Sapiens

<400> 849

Trp Ser Asn Ala Thr His Gly Cys Asn Gly Thr Asn Gly Cys Asn Tyr
1 5 10 15

Thr Asn Gly Ala Tyr Thr Ala Tyr
            20

<210> 850
<211> 39
<212> PRT
<213> Homo Sapiens

<400> 850

Gly Ala Arg Gly Gly Asn Gly Ala Tyr Gly Gly Asn Gly Gly Asn Thr
1   5   10   15

Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr
            20   25   30

Gly Gly Ala Tyr Gly Thr Asn
        35

<210> 851
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 851

Ala Thr Gly Thr Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn Thr
1   5   10   15

Gly Gly Thr Ala Tyr Gly Gly Asn Gly Thr Asn Thr Thr Tyr Gly Ala
            20   25   30

Tyr Thr Ala Tyr
        35

<210> 852
<211> 39
<212> PRT
<213> Homo Sapiens

<400> 852

Gly Thr Asn Thr Ala Tyr Trp Ser Asn Trp Ser Asn Gly Gly Asn Thr
1   5   10   15

Gly Gly Trp Ser Asn Thr Thr Tyr Thr Ala Tyr Gly Gly Asn Ala Thr
            20   25   30

Gly Gly Ala Tyr Gly Thr Asn
        35

<210> 853
<211> 24
<212> PRT
<213> Homo Sapiens

<400> 853

Met Gly Asn Met Gly Asn Gly Ala Arg Tyr Thr Asn Cys Cys Asn Thr
1   5   10   15

Thr Tyr Gly Ala Tyr Thr Ala Tyr
            20

<210> 854
<211> 24
<212> PRT
<213> Homo Sapiens

<400> 854

Met Gly Asn Ala Ala Tyr Thr Gly Gly Cys Ala Asn Cys Cys Asn Thr
1   5   10   15

Thr Tyr Gly Ala Tyr Thr Ala Tyr
            20

<210> 855
<211> 24
<212> PRT
<213> Homo Sapiens

<400> 855

Met Gly Asn Tyr Thr Asn Gly Ala Arg Tyr Thr Asn Cys Cys Asn Thr
1   5   10   15

Thr Tyr Gly Ala Tyr Thr Ala Tyr
            20

<210> 856
<211> 24
<212> PRT
<213> Homo Sapiens

<400> 856

Met Gly Asn Met Gly Asn Gly Ala Arg Gly Thr Asn Cys Cys Asn Thr
1   5   10   15

Thr Tyr Gly Ala Tyr Thr Ala Tyr
            20

<210> 857
<211> 24
<212> PRT
<213> Homo Sapiens

<400> 857

Met Gly Asn Cys Ala Tyr Cys Ala Asn Ala Ala Tyr Cys Cys Asn Thr
1   5   10   15

Thr Tyr Gly Ala Arg Thr Ala Tyr
            20

<210> 858
<211> 24
<212> PRT
<213> Homo Sapiens

<400> 858

Met Gly Asn Gly Gly Asn Gly Ala Arg Tyr Thr Asn Cys Cys Asn Thr
1 5 10 15

Thr Tyr Gly Ala Tyr Thr Ala Tyr
20

<210> 859
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 859

Gly Ala Tyr Met Gly Asn Gly Thr Asn Gly Gly Asn Gly Cys Asn Cys
1 5 10 15

Ala Asn Cys Cys Asn Gly Ala Tyr Gly Cys Asn Thr Thr Tyr Gly Ala
20 25 30

Tyr Ala Thr His
35

<210> 860
<211> 57
<212> PRT
<213> Homo Sapiens

<400> 860

Gly Ala Arg Gly Gly Asn Ala Thr His Gly Cys Asn Gly Thr Asn Gly
1 5 10 15

Cys Asn Gly Gly Asn Cys Ala Asn Gly Cys Asn Gly Ala Arg Thr Ala
20 25 30

Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Cys Asn
35 40 45

Ala Thr Gly Gly Ala Tyr Gly Thr Asn
50 55

<210> 861
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 861

Gly Ala Arg Gly Gly Asn Ala Thr His Gly Cys Asn Gly Cys Asn Met
1 5 10 15

Gly Asn Gly Ala Tyr Trp Ser Asn Thr Ala Tyr Thr Ala Tyr Thr Ala
20 25 30

Tyr Thr Ala Tyr Gly Cys Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
35 40 45

<210> 862
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 862

Gly Ala Arg Gly Gly Asn Ala Thr His Gly Cys Asn Gly Gly Asn Met
1 5 10 15

Gly Asn Gly Ala Tyr Trp Ser Asn Thr Ala Tyr Thr Ala Tyr Thr Ala
20 25 30

Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
35 40 45

<210> 863
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 863

Trp Ser Asn Thr Ala Tyr Thr Ala Tyr Gly Ala Tyr Trp Ser Asn Trp
1 5 10 15

Ser Asn Gly Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly
20 25 30

Asn Thr Thr Tyr Gly Ala Tyr Thr Ala Tyr
35 40

<210> 864
<211> 15
<212> PRT
<213> Homo Sapiens

<400> 864

Ala Ala Tyr Gly Thr Asn Ala Thr His Gly Ala Tyr Thr Ala Tyr
1 5 10 15

<210> 865
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 865

Gly Gly Asn Gly Gly Asn Gly Cys Asn Cys Ala Asn Gly Gly Asn Gly
1 5 10 15

Cys Asn Gly Ala Arg Thr Ala Tyr Thr Thr Tyr Cys Ala Arg Cys Ala
            20   25   30

Tyr

<210> 866
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 866

Tyr Thr Asn Thr Gly Gly Thr Thr Tyr Gly Gly Asn Gly Ala Arg Cys
1   5   10   15

Ala Asn Thr Thr Tyr Gly Ala Tyr Thr Ala Tyr
            20   25

<210> 867
<211> 18
<212> PRT
<213> Homo Sapiens

<400> 867

Ala Ala Tyr Tyr Thr Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr
1   5   10   15

Ala Tyr

<210> 868
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 868

Trp Ser Asn Cys Ala Tyr Thr Ala Tyr Gly Gly Asn Gly Gly Asn Gly
1   5   10   15

Ala Tyr Thr Ala Tyr Gly Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly
            20   25   30

Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
        35   40

<210> 869
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 869

Gly Ala Tyr Gly Gly Asn Thr Gly Gly Cys Ala Arg Cys Ala Arg Cys
1   5   10   15

Ala Arg Gly Cys Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Ala
20 25 30

Tyr

<210> 870
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 870

Thr Gly Gly Gly Gly Asn Ala Thr His Trp Ser Asn Gly Cys Asn Cys
1 5 10 15

Cys Asn Thr Thr Tyr Gly Ala Tyr Thr Gly Tyr
20 25

<210> 871
<211> 18
<212> PRT
<213> Homo Sapiens

<400> 871

Thr Gly Gly Gly Cys Asn Cys Cys Asn Thr Thr Tyr Gly Ala Tyr Thr
1 5 10 15

Ala Tyr

<210> 872
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 872

Gly Ala Tyr Gly Gly Asn Thr Ala Tyr Ala Ala Tyr Thr Gly Gly Ala
1 5 10 15

Ala Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Ala Ala Tyr Thr Ala
20 25 30

Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
35 40 45

<210> 873
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 873

Gly Ala Tyr Gly Gly Asn Thr Ala Tyr Ala Ala Tyr Thr Gly Gly Ala
1 5 10 15

Ala Tyr Ala Ala Tyr Gly Gly Asn Gly Gly Asn Thr Ala Tyr Thr Ala
            20   25   30

Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
        35   40   45

<210> 874
<211> 24
<212> PRT
<213> Homo Sapiens

<400> 874

Gly Gly Asn Cys Cys Asn Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala
1   5   10   15

Thr Gly Gly Ala Tyr Gly Thr Asn
            20

<210> 875
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 875

Gly Cys Asn Tyr Thr Asn Met Gly Asn Gly Gly Asn Ala Thr His Gly
1   5   10   15

Thr Asn Tyr Thr Asn Ala Thr Gly Gly Thr Asn Thr Ala Tyr Gly Thr
            20   25   30

Asn Tyr Thr Asn Gly Gly Asn Gly Cys Asn Tyr Thr Asn Gly Ala Tyr
        35   40   45

Ala Thr His
    50

<210> 876
<211> 51
<212> PRT
<213> Homo Sapiens

<400> 876

Gly Ala Tyr Gly Ala Arg Cys Ala Asn Gly Thr Asn Gly Thr Asn Met
1   5   10   15

Gly Asn Gly Gly Asn Tyr Thr Asn Ala Thr His Met Gly Asn Thr Ala
            20   25   30

Tyr Thr Gly Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr
        35   40   45

Gly Thr Asn
    50

<210> 877
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 877

Gly Ala Tyr Met Gly Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly
1 5 10 15

Ala Tyr Thr Ala Tyr Gly Gly Asn Met Gly Asn Ala Thr Gly Gly Ala
20 25 30

Tyr Gly Thr Asn
35

<210> 878
<211> 27
<212> PRT
<213> Homo Sapiens

<400> 878

Trp Ser Asn Ala Ala Tyr Ala Ala Tyr Thr Ala Tyr Gly Gly Asn Thr
1 5 10 15

Gly Tyr Thr Thr Tyr Gly Cys Asn Tyr Thr Asn
20 25

<210> 879
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 879

Gly Gly Asn Thr Ala Tyr Ala Ala Tyr Thr Ala Tyr Gly Gly Asn Tyr
1 5 10 15

Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Ala Tyr Trp Ser
20 25 30

Asn Trp Ser Asn Gly Gly Asn Thr Ala Tyr Cys Cys Asn Trp Ser Asn
35 40 45

Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly Gly
50 55 60

Ala Tyr Gly Thr Asn
65

<210> 880
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 880

```
Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Gly Ala Tyr Ala Thr His Tyr
1               5                   10                  15


Thr Asn Cys Ala Asn Gly Gly Asn Thr Ala Tyr Cys Cys Asn Thr Thr
            20                  25                  30


Tyr Thr Ala Tyr Thr Thr Tyr Gly Ala Tyr Thr Ala Tyr
        35                  40                  45


<210>  881
<211>  36
<212>  PRT
<213>  Homo Sapiens

<400>  881

Gly Gly Asn Gly Gly Asn Thr Ala Tyr Trp Ser Asn Trp Ser Asn Trp
1               5                   10                  15


Ser Asn Thr Gly Gly Thr Ala Tyr Thr Gly Gly Thr Thr Tyr Gly Ala
            20                  25                  30


Tyr Cys Cys Asn
        35


<210>  882
<211>  36
<212>  PRT
<213>  Homo Sapiens

<400>  882

Gly Gly Asn Gly Gly Asn Thr Ala Tyr Trp Ser Asn Trp Ser Asn Trp
1               5                   10                  15


Ser Asn Thr Gly Gly Thr Thr Tyr Thr Gly Gly Thr Thr Tyr Gly Ala
            20                  25                  30


Tyr Cys Cys Asn
        35


<210>  883
<211>  45
<212>  PRT
<213>  Homo Sapiens

<400>  883

Gly Ala Tyr Gly Gly Asn Thr Ala Tyr Trp Ser Asn Thr Ala Tyr Gly
1               5                   10                  15


Gly Asn Cys Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala
            20                  25                  30


Tyr Gly Gly Asn Ala Thr Gly Gly Ala Tyr Gly Thr Asn
        35                  40                  45
```

<210> 884
<211> 48
<212> PRT
<213> Homo Sapiens

<400> 884

Trp Ser Asn Gly Cys Asn Tyr Thr Asn Met Gly Asn Thr Ala Tyr Thr
1 5 10 15

Thr Tyr Gly Ala Tyr Thr Gly Gly Tyr Thr Asn Thr Thr Tyr Trp Ser
20 25 30

Asn Gly Ala Tyr Gly Thr Asn Trp Ser Asn Gly Ala Tyr Ala Thr His
35 40 45

<210> 885
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 885

Cys Ala Arg Ala Ala Arg Trp Ser Asn Thr Ala Tyr Gly Gly Asn Thr
1 5 10 15

Ala Tyr Trp Ser Asn Thr Ala Tyr Thr Thr Tyr Gly Ala Tyr Thr Ala
20 25 30

Tyr

<210> 886
<211> 36
<212> PRT
<213> Homo Sapiens

<400> 886

Cys Ala Arg Gly Gly Asn Thr Ala Tyr Gly Gly Asn Trp Ser Asn Gly
1 5 10 15

Gly Asn Thr Gly Gly Gly Gly Asn Thr Ala Tyr Thr Thr Tyr Gly Ala
20 25 30

Tyr Thr Ala Tyr
35

<210> 887
<211> 54
<212> PRT
<213> Homo Sapiens

<400> 887

Cys Ala Arg Gly Gly Asn Tyr Thr Asn Gly Cys Asn Gly Thr Asn Gly
1 5 10 15

```
Cys Asn Gly Gly Asn Cys Ala Asn Trp Ser Asn Thr Ala Tyr Thr Ala
            20                  25                  30

Tyr Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr Gly
        35                  40                  45

Gly Ala Tyr Gly Thr Asn
    50
```

<210> 888
<211> 39
<212> PRT
<213> Homo Sapiens

<400> 888

```
Gly Ala Tyr Met Gly Asn Gly Cys Asn Gly Thr Asn Gly Cys Asn Gly
1               5                   10                  15

Gly Asn Thr Ala Tyr Thr Ala Tyr Thr Ala Tyr Gly Gly Asn Ala Thr
            20                  25                  30

Gly Gly Ala Tyr Gly Thr Asn
        35
```

<210> 889
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 889

```
Gly Ala Tyr Gly Thr Asn Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Cys Cys Asn Gly Thr Asn Cys Ala Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60

Ser Asn Thr Gly Tyr
65
```

<210> 890
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 890

```
Gly Ala Tyr Gly Thr Asn Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
```

```
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Cys Cys Asn Gly Thr Asn Cys Ala Asn Tyr Thr Asn Gly Gly Asn
        35                  40                  45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60

Ser Asn Thr Gly Tyr
65
```

<210> 891
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 891

```
Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Cys Ala Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60

Ser Asn Thr Gly Tyr
65
```

<210> 892
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 892

```
Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Cys Ala Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
    50                  55                  60
```

Ser Asn Thr Gly Tyr
65

<210> 893
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 893

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Ala
50 55 60

Thr His Thr Gly Tyr
65

<210> 894
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 894

Ala Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Cys Ala Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Trp Ser
20 25 30

Asn Cys Cys Asn Gly Thr Asn Cys Ala Asn Tyr Thr Asn Gly Gly Asn
35 40 45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
50 55 60

Ser Asn Thr Gly Tyr
65

<210> 895
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 895

Gly Ala Arg Ala Thr His Gly Thr Asn Tyr Thr Asn Cys Ala Asn Cys
1 5 10 15

```
Ala Arg Trp Ser Asn Cys Cys Asn Gly Gly Asn Cys Ala Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Tyr Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Tyr Thr Asn Trp
    50                  55                  60

Ser Asn Thr Gly Tyr
65
```

<210> 896
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 896

```
Gly Ala Arg Ala Thr His Gly Thr Asn Tyr Thr Asn Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Gly Asn Cys Ala Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Tyr Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn
        35                  40                  45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Tyr Thr Asn Trp
    50                  55                  60

Ser Asn Thr Gly Tyr
65
```

<210> 897
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 897

```
Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20                  25                  30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35                  40                  45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50                  55                  60
```

Ala Asn Thr Gly Tyr
65

<210> 898
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 898

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
20 25 30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
35 40 45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
50 55 60

Ala Tyr Thr Gly Tyr
65

<210> 899
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 899

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
20 25 30

Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
35 40 45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
50 55 60

Ala Tyr Thr Gly Tyr
65

<210> 900
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 900

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
            20   25   30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
        35   40   45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
    50   55   60

Ala Tyr Thr Gly Tyr
65

<210> 901
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 901

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1   5   10   15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20   25   30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35   40   45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50   55   60

Ala Asn Thr Gly Tyr
65

<210> 902
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 902

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1   5   10   15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20   25   30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35   40   45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Gly Cys Asn Ala Thr His Cys
    50   55   60

Ala Asn Thr Gly Tyr

65

<210> 903
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 903

Gly Ala Arg Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Cys Asn Cys Ala Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Thr Asn Trp Ser Asn Cys Cys Asn Gly Gly Asn
35 40 45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Tyr Thr Asn Trp
50 55 60

Ser Asn Thr Gly Tyr
65

<210> 904
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 904

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Gly Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr
65

<210> 905
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 905

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20   25   30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35   40   45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50   55   60

Ala Asn Thr Gly Tyr
65

<210> 906
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 906

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1   5   10   15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20   25   30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35   40   45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50   55   60

Ala Asn Thr Gly Tyr
65

<210> 907
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 907

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1   5   10   15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20   25   30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35   40   45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50   55   60

Ala Asn Thr Gly Tyr
65

<210> 908
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 908

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr
65

<210> 909
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 909

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr
65

<210> 910
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 910

Thr Gly Gly Tyr Thr Asn Cys Ala Arg Cys Ala Arg Met Gly Asn Cys
1 5 10 15

Cys Asn Gly Gly Asn Cys Ala Arg Trp Ser Asn Cys Cys Asn Met Gly

20 25 30

Asn Met Gly Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
35 40 45

<210> 911
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 911

Thr Gly Gly Thr Ala Tyr Tyr Thr Asn Cys Ala Arg Ala Ala Arg Cys
1 5 10 15

Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys Asn Cys Ala
20 25 30

Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
35 40 45

<210> 912
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 912

Thr Gly Gly Thr Thr Tyr Tyr Thr Asn Cys Ala Arg Ala Ala Arg Cys
1 5 10 15

Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys Asn Cys Ala
20 25 30

Arg Cys Cys Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
35 40 45

<210> 913
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 913

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Thr Asn Cys Cys Asn Ala Ala
20 25 30

Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
35 40 45

<210> 914
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 914

Thr Gly Gly Tyr Thr Asn Cys Ala Arg Cys Ala Arg Met Gly Asn Cys
1 5 10 15

Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys Asn Met Gly
20 25 30

Asn Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
35 40 45

<210> 915
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 915

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1 5 10 15

Cys Asn Gly Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Met Gly
20 25 30

Asn Tyr Thr Asn Tyr Thr Asn Ala Thr His Trp Ser Asn
35 40 45

<210> 916
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 916

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1 5 10 15

Cys Asn Gly Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Met Gly
20 25 30

Asn Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
35 40 45

<210> 917
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 917

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Cys Cys Asn Ala Ala
20 25 30

Arg Met Gly Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
        35   40   45

<210> 918
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 918

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1   5   10   15

Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys Asn Ala Ala
            20   25   30

Arg Tyr Thr Asn Thr Thr Tyr Ala Thr His Thr Ala Tyr
        35   40   45

<210> 919
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 919

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1   5   10   15

Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys Asn Ala Ala
            20   25   30

Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
        35   40   45

<210> 920
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 920

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1   5   10   15

Cys Asn Gly Gly Asn Cys Ala Arg Cys Cys Asn Cys Cys Asn Ala Ala
            20   25   30

Arg Gly Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
        35   40   45

<210> 921
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 921

```
Thr Gly Gly Thr Thr Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1               5                   10                  15


Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Cys Cys Asn Ala Ala
            20                  25                  30


Arg Trp Ser Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
        35                  40                  45


<210>  922
<211>  45
<212>  PRT
<213>  Homo Sapiens

<400>  922

Thr Gly Gly Tyr Thr Asn Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1               5                   10                  15


Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Cys Cys Asn Ala Ala
            20                  25                  30


Arg Trp Ser Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
        35                  40                  45


<210>  923
<211>  45
<212>  PRT
<213>  Homo Sapiens

<400>  923

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Gly Ala Tyr Cys
1               5                   10                  15


Cys Asn Gly Gly Asn Cys Ala Arg Gly Cys Asn Cys Cys Asn Met Gly
            20                  25                  30


Asn Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
        35                  40                  45


<210>  924
<211>  45
<212>  PRT
<213>  Homo Sapiens

<400>  924

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1               5                   10                  15


Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Cys Cys Asn Ala Ala
            20                  25                  30


Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
        35                  40                  45
```

<210> 925
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 925

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Cys Cys Asn Ala Ala
20 25 30

Arg Thr Thr Tyr Tyr Thr Asn Ala Thr His Thr Ala Tyr
35 40 45

<210> 926
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 926

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Met Gly Asn Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Tyr Gly Cys Asn Cys Cys Asn Ala Ala
20 25 30

Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
35 40 45

<210> 927
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 927

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Cys Cys Asn Ala Ala
20 25 30

Arg Gly Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
35 40 45

<210> 928
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 928

Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Cys
1 5 10 15

```
Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Cys Cys Asn Gly Ala
            20                  25                  30

Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
        35                  40                  45
```

<210> 929
<211> 45
<212> PRT
<213> Homo Sapiens

<400> 929

```
Thr Gly Gly Thr Ala Tyr Cys Ala Arg Cys Ala Arg Ala Ala Arg Tyr
1               5                   10                  15

Thr Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Cys Cys Asn Ala Ala
            20                  25                  30

Arg Tyr Thr Asn Tyr Thr Asn Ala Thr His Cys Ala Tyr
        35                  40                  45
```

<210> 930
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 930

```
Gly Gly Asn Gly Thr Asn Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr
1               5                   10                  15

Thr Tyr Ala Ala Tyr Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
            20                  25                  30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
        35                  40                  45

Tyr Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Met Gly Asn Gly
    50                  55                  60

Thr Asn Gly Ala Arg Gly Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr
65                  70                  75                  80

Asn Gly Gly Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
                85                  90                  95
```

<210> 931
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 931

```
Gly Gly Asn Gly Thr Asn Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr
1               5                   10                  15
```

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
            20   25   30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
        35   40   45

Tyr Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Met Gly Asn Gly
    50   55   60

Thr Asn Gly Ala Arg Gly Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr
65   70   75   80

Asn Gly Gly Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
                85   90   95

<210> 932
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 932

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Thr
1   5   10   15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
            20   25   30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
        35   40   45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
    50   55   60

Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr
65   70   75   80

Asn Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
                85   90   95

<210> 933
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 933

Gly Gly Asn Gly Thr Asn Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr
1   5   10   15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Gly Cys
            20   25   30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Met Gly Asn Gly
50 55 60

Thr Asn Gly Ala Arg Gly Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr
65 70 75 80

Asn Gly Gly Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 934
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 934

Gly Gly Asn Gly Thr Asn Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Cys Ala Asn Gly Gly Asn Gly Cys
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Met Gly Asn Gly
50 55 60

Thr Asn Gly Ala Arg Gly Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr
65 70 75 80

Asn Gly Gly Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 935
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 935

Gly Gly Asn Ala Thr His Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Met Gly Asn Tyr
50 55 60

```
Thr Asn Gly Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr
65                  70                  75                  80


Tyr Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
                85                  90                  95


<210>  936
<211>  96
<212>  PRT
<213>  Homo Sapiens

<400>  936

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Thr
1               5                   10                  15


Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
            20                  25                  30


Asn Gly Gly Asn Cys Ala Asn Gly Ala Arg Thr Thr Tyr Cys Ala Asn
        35                  40                  45


Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
    50                  55                  60


Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr
65                  70                  75                  80


Tyr Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
                85                  90                  95


<210>  937
<211>  96
<212>  PRT
<213>  Homo Sapiens

<400>  937

Gly Gly Asn Gly Thr Asn Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr
1               5                   10                  15


Thr Tyr Cys Ala Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
            20                  25                  30


Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
        35                  40                  45


Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
    50                  55                  60


Thr Asn Cys Ala Arg Gly Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr
65                  70                  75                  80
```

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 938
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 938

Gly Gly Asn Gly Thr Asn Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Gly Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr
65 70 75 80

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 939
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 939

Gly Gly Asn Gly Thr Asn Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Gly Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr
65 70 75 80

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Thr Tyr Thr Gly Tyr
85 90 95

<210> 940
<211> 96

<212> PRT
<213> Homo Sapiens

<400> 940

Gly Gly Asn Gly Thr Asn Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr
1 5 10 15

Thr Tyr Gly Gly Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Gly Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr
65 70 75 80

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 941
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 941

Gly Gly Asn Gly Thr Asn Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Gly Cys Asn Gly Ala Tyr Gly Ala Tyr Gly Thr
65 70 75 80

Asn Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 942
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 942

Gly Gly Asn Gly Thr Asn Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr

1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Gly Gly Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Gly Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr
65 70 75 80

Asn Gly Cys Asn Tyr Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 943
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 943

Gly Gly Asn Gly Thr Asn Cys Cys Asn Gly Ala Tyr Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Gly Cys Asn Gly Ala Arg Gly Ala Tyr Gly Thr
65 70 75 80

Asn Gly Cys Asn Gly Thr Asn Thr Thr Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 944
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 944

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Ala Ala Arg Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr
65 70 75 80

Tyr Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 945
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 945

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr
65 70 75 80

Tyr Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 946
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 946

Gly Gly Asn Ala Thr His Cys Cys Asn Gly Cys Asn Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Arg Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr

50 55 60

Thr Asn Cys Ala Arg Trp Ser Asn Gly Ala Arg Gly Ala Tyr Thr Thr
65 70 75 80

Tyr Gly Cys Asn Gly Thr Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 947
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 947

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr
65 70 75 80

Tyr Gly Cys Asn Gly Cys Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 948
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 948

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Gly
1 5 10 15

Thr Asn Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Met Gly Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr
65 70 75 80

Tyr Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 949
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 949

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr
65 70 75 80

Tyr Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 950
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 950

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Ala Ala Tyr Thr Thr
65 70 75 80

Tyr Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 951

<211> 96
<212> PRT
<213> Homo Sapiens

<400> 951

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Thr Thr Tyr Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr
65 70 75 80

Tyr Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 952
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 952

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Thr
1 5 10 15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
20 25 30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
35 40 45

Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Trp Ser Asn Trp Ser Asn Tyr
50 55 60

Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr
65 70 75 80

Tyr Gly Cys Asn Trp Ser Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
85 90 95

<210> 953
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 953

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Thr
1   5   10   15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
            20   25   30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
        35   40   45

Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
    50   55   60

Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Thr Thr
65   70   75   80

Tyr Gly Cys Asn Trp Ser Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
                85   90   95

<210> 954
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 954

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Thr
1   5   10   15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
            20   25   30

Asn Gly Gly Asn Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
        35   40   45

Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
    50   55   60

Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Ala Thr
65   70   75   80

His Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
                85   90   95

<210> 955
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 955

Gly Gly Asn Gly Thr Asn Cys Cys Asn Trp Ser Asn Met Gly Asn Thr
1   5   10   15

Thr Tyr Trp Ser Asn Gly Gly Asn Trp Ser Asn Gly Gly Asn Trp Ser
            20   25   30

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Asn Gly Ala Arg Cys Ala Asn Gly Ala Tyr Thr Thr Tyr Cys Ala Asn
        35                  40                  45


Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Trp Ser Asn Tyr
    50                  55                  60


Thr Asn Cys Ala Arg Cys Cys Asn Gly Ala Arg Gly Ala Tyr Ala Thr
65                  70                  75                  80


His Gly Cys Asn Cys Ala Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr
                85                  90                  95


<210>  956
<211>  30
<212>  PRT
<213>  Homo Sapiens

<400>  956

Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Met
1               5                   10                  15


Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
            20                  25                  30


<210>  957
<211>  30
<212>  PRT
<213>  Homo Sapiens

<400>  957

Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Met
1               5                   10                  15


Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Thr His
            20                  25                  30


<210>  958
<211>  30
<212>  PRT
<213>  Homo Sapiens

<400>  958

Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Ala
1               5                   10                  15


Ala Arg Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
            20                  25                  30


<210>  959
<211>  30
<212>  PRT
<213>  Homo Sapiens
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<400> 959

Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys Ala Asn Ala
1 5 10 15

Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
20 25 30

<210> 960
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 960

Thr Thr Tyr Gly Gly Asn Cys Ala Tyr Gly Gly Asn Cys Ala Asn Met
1 5 10 15

Gly Asn Tyr Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
20 25 30

<210> 961
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 961

Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Asn Ala
1 5 10 15

Ala Arg Gly Thr Asn Gly Ala Tyr Ala Thr His Ala Ala Arg
20 25 30

<210> 962
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 962

Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Ala
1 5 10 15

Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
20 25 30

<210> 963
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 963

Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Asn Ala
1 5 10 15

Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Ala Ala Arg
20 25 30

<210> 964
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 964

Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys Ala Asn Ala
1 5 10 15

Ala Arg Gly Thr Asn Gly Cys Asn Ala Thr His Ala Ala Arg
20 25 30

<210> 965
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 965

Thr Thr Tyr Gly Gly Asn Cys Cys Asn Gly Gly Asn Cys Ala Asn Ala
1 5 10 15

Ala Arg Ala Thr Gly Gly Ala Tyr Ala Thr His Ala Ala Arg
20 25 30

<210> 966
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 966

Thr Thr Tyr Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Ala
1 5 10 15

Ala Arg Gly Thr Asn Gly Ala Arg Thr Thr Tyr Ala Ala Arg
20 25 30

<210> 967
<211> 30
<212> PRT
<213> Homo Sapiens

<400> 967

Thr Thr Tyr Gly Gly Asn Gly Gly Asn Gly Gly Asn Cys Ala Asn Ala
1 5 10 15

Ala Arg Gly Thr Asn Gly Ala Arg Ala Thr His Met Gly Asn
20 25 30

<210> 968
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 968

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Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30


Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Cys Asn
        35                  40                  45


Trp Ser Asn Gly Thr Asn Ala Ala Arg Gly Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Ala Ala Arg Gly Cys Asn Trp Ser Asn
65                  70                  75


<210>  969
<211>  75
<212>  PRT
<213>  Homo Sapiens

<400>  969

Cys Ala Arg Gly Thr Asn Cys Ala Tyr Tyr Thr Asn Gly Thr Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30


Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Cys Asn
        35                  40                  45


Trp Ser Asn Gly Thr Asn Ala Ala Arg Gly Thr Asn Trp Ser Asn Thr
    50                  55                  60


Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn
65                  70                  75


<210>  970
<211>  75
<212>  PRT
<213>  Homo Sapiens

<400>  970

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Cys
1               5                   10                  15


Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30


Asn Met Gly Asn Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Cys Asn
        35                  40                  45


Trp Ser Asn Gly Thr Asn Ala Ala Arg Gly Thr Asn Trp Ser Asn Thr
```

50 55 60

Gly Tyr Ala Ala Arg Gly Thr Asn Trp Ser Asn
65 70 75

<210> 971
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 971

Cys Ala Arg Gly Thr Asn Cys Ala Asn Tyr Thr Asn Ala Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Thr Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Cys Ala Asn Gly Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Cys Ala Asn Thr
50 55 60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn
65 70 75

<210> 972
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 972

Cys Ala Arg Ala Thr His Cys Ala Asn Tyr Thr Asn Ala Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Cys Ala Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Cys Ala Asn Cys Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Cys Ala Asn Tyr Thr Asn Cys Ala Asn Thr
50 55 60

Gly Tyr Cys Ala Asn Thr Thr Tyr Trp Ser Asn
65 70 75

<210> 973
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 973

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
35 40 45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn
65 70 75

<210> 974
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 974

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Tyr Thr Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
35 40 45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn
65 70 75

<210> 975
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 975

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Tyr Thr Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
35 40 45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Cys Ala Asn Gly Cys Asn Trp Ser Asn
65 70 75

<210> 976
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 976

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Gly Thr
20 25 30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Met Gly Asn
35 40 45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn
65 70 75

<210> 977
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 977

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Gly Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Cys Ala Arg Cys Cys Asn Gly Gly Asn Gly Gly Asn
35 40 45

Trp Ser Asn Tyr Thr Asn Met Gly Asn Tyr Thr Asn Trp Ser Asn Thr
50 55 60

Gly Tyr Gly Cys Asn Gly Cys Asn Trp Ser Asn
65 70 75

<210> 978
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 978

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly

1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
50 55 60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn
65 70 75

<210> 979
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 979

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Ala Ala Tyr Thr
50 55 60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn
65 70 75

<210> 980
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 980

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Cys
1 5 10 15

Ala Arg Thr Gly Gly Gly Gly Asn Gly Cys Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Tyr Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Gly Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
50 55 60

Gly Tyr Gly Cys Asn Gly Thr Asn Thr Ala Tyr
65 70 75

<210> 981
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 981

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Gly Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
50 55 60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn
65 70 75

<210> 982
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 982

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Tyr Thr
20 25 30

Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Ala Arg
35 40 45

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Thr
50 55 60

Gly Tyr Ala Ala Arg Gly Gly Asn Trp Ser Asn
65 70 75

<210> 983
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 983

Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Gly Thr Asn Cys
1 5 10 15

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Ala Arg Trp Ser Asn Gly Gly Asn Gly Cys Asn Gly Ala Arg Gly Thr
            20                  25                  30

Asn Ala Ala Arg Ala Ala Arg Cys Cys Asn Gly Gly Asn Gly Ala Arg
        35                  40                  45

Trp Ser Asn Tyr Thr Asn Ala Ala Arg Ala Thr His Trp Ser Asn Thr
    50                  55                  60

Gly Tyr Ala Ala Arg Gly Gly Asn Trp Ser Asn
65                  70                  75


<210>  984
<211>  75
<212>  PRT
<213>  Homo Sapiens

<400>  984

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Cys
1               5                   10                  15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
        35                  40                  45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60

Gly Tyr Gly Cys Asn Ala Thr His Trp Ser Asn
65                  70                  75


<210>  985
<211>  42
<212>  PRT
<213>  Homo Sapiens

<400>  985

Thr Gly Gly Gly Thr Asn Met Gly Asn Cys Ala Arg Gly Cys Asn Cys
1               5                   10                  15

Cys Asn Gly Gly Asn Cys Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala
            20                  25                  30

Arg Thr Gly Gly Ala Thr Gly Gly Gly Asn
        35                  40


<210>  986
<211>  42
<212>  PRT
<213>  Homo Sapiens
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<400> 986

Thr Gly Gly Gly Thr Asn Met Gly Asn Cys Ala Arg Gly Cys Asn Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala
20 25 30

Arg Thr Gly Gly Ala Thr Gly Gly Gly Asn
35 40

<210> 987
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 987

Thr Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Tyr Thr Asn Gly Ala
20 25 30

Arg Thr Gly Gly Tyr Thr Asn Gly Cys Asn
35 40

<210> 988
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 988

Thr Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Cys Asn Tyr Thr Asn Gly Ala
20 25 30

Arg Thr Gly Gly Tyr Thr Asn Gly Thr Asn
35 40

<210> 989
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 989

Thr Gly Gly Gly Thr Asn Met Gly Asn Cys Ala Arg Gly Cys Asn Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala
20 25 30

Arg Thr Gly Gly Gly Thr Asn Trp Ser Asn
35 40

<210> 990
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 990

Thr Gly Gly Gly Thr Asn Met Gly Asn Cys Ala Arg Gly Cys Asn Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala
20 25 30

Arg Thr Gly Gly Gly Thr Asn Gly Cys Asn
35 40

<210> 991
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 991

Thr Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala
20 25 30

Arg Thr Gly Gly Ala Thr His Gly Gly Asn
35 40

<210> 992
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 992

Thr Gly Gly Gly Thr Asn Met Gly Asn Cys Ala Arg Cys Ala Tyr Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala
20 25 30

Arg Thr Gly Gly Ala Thr His Gly Gly Asn
35 40

<210> 993
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 993

Thr Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala
20 25 30

Arg Thr Gly Gly Ala Thr His Gly Gly Asn
35 40

<210> 994
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 994

Thr Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Cys Cys Asn Gly
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala
20 25 30

Arg Thr Gly Gly Ala Thr His Gly Gly Asn
35 40

<210> 995
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 995

Thr Gly Gly Gly Thr Asn Met Gly Asn Cys Ala Arg Ala Thr Gly Cys
1 5 10 15

Cys Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala
20 25 30

Arg Thr Gly Gly Ala Thr Gly Gly Gly Asn
35 40

<210> 996
<211> 42
<212> PRT
<213> Homo Sapiens

<400> 996

Thr Gly Gly Ala Thr His Met Gly Asn Cys Ala Arg Trp Ser Asn Cys
1 5 10 15

Cys Asn Trp Ser Asn Met Gly Asn Gly Gly Asn Tyr Thr Asn Gly Ala
20 25 30

Arg Thr Gly Gly Tyr Thr Asn Gly Gly Asn
35 40

<210> 997
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 997

Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Cys Ala Asn Trp Ser
20 25 30

Asn Cys Ala Asn Gly Cys Asn Thr Ala Tyr Ala Thr Gly Gly Ala Arg
35 40 45

Tyr Thr Asn Met Gly Asn Trp Ser Asn Tyr Thr Asn Met Gly Asn Trp
50 55 60

Ser Asn Gly Ala Tyr Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 998
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 998

Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr Gly Cys Ala Asn Met
1 5 10 15

Gly Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Thr His Trp Ser
20 25 30

Asn Cys Ala Asn Gly Cys Asn Thr Ala Tyr Ala Thr Gly Gly Ala Arg
35 40 45

Tyr Thr Asn Trp Ser Asn Met Gly Asn Tyr Thr Asn Met Gly Asn Trp
50 55 60

Ser Asn Gly Ala Tyr Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 999
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 999

Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr Gly Tyr Thr Asn Gly
1 5 10 15

Ala Arg Gly Ala Tyr Cys Ala Asn Trp Ser Asn Cys Ala Asn Gly Ala
20 25 30

Tyr Cys Ala Asn Gly Cys Asn Thr Ala Tyr Ala Thr Gly Gly Ala Arg
35 40 45

Tyr Thr Asn Trp Ser Asn Trp Ser Asn Tyr Thr Asn Met Gly Asn Trp
50 55 60

Ser Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Cys Ala Asn
85 90 95

<210> 1000
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1000

Met Gly Asn Tyr Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Ala
1 5 10 15

Ala Arg Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Trp Ser
20 25 30

Asn Cys Ala Arg Gly Thr Asn Gly Thr Asn Tyr Thr Asn Cys Ala Asn
35 40 45

Ala Thr Gly Cys Ala Asn Ala Ala Tyr Ala Thr Gly Gly Ala Tyr Cys
50 55 60

Cys Asn Gly Thr Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Cys Ala
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1001
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1001

Met Gly Asn Tyr Thr Asn Cys Ala Asn Ala Thr His Cys Ala Asn Ala
1 5 10 15

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Ala Arg Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
            20                  25                  30

Tyr Cys Ala Arg Gly Thr Asn Gly Thr Asn Tyr Thr Asn Cys Ala Asn
        35                  40                  45

Ala Thr Gly Cys Ala Asn Ala Ala Tyr Ala Thr Gly Gly Ala Tyr Cys
    50                  55                  60

Cys Asn Gly Thr Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Cys Ala
65                  70                  75                  80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Cys Ala Tyr
                85                  90                  95

<210>  1002
<211>  96
<212>  PRT
<213>  Homo Sapiens

<400>  1002

Met Gly Asn Tyr Thr Asn Cys Ala Asn Ala Thr His Cys Ala Asn Ala
1               5                   10                  15

Ala Arg Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Cys Ala
            20                  25                  30

Asn Cys Ala Arg Gly Thr Asn Gly Thr Asn Tyr Thr Asn Cys Ala Asn
        35                  40                  45

Gly Thr Asn Cys Ala Asn Gly Ala Tyr Ala Thr Gly Gly Ala Tyr Cys
    50                  55                  60

Cys Asn Gly Thr Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Cys Ala
65                  70                  75                  80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Cys Ala Tyr
                85                  90                  95

<210>  1003
<211>  96
<212>  PRT
<213>  Homo Sapiens

<400>  1003

Met Gly Asn Tyr Thr Asn Cys Ala Asn Ala Thr His Cys Ala Asn Ala
1               5                   10                  15

Ala Arg Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
            20                  25                  30

Tyr Cys Ala Arg Gly Thr Asn Gly Thr Asn Tyr Thr Asn Cys Ala Asn
        35                  40                  45
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```
Ala Thr Gly Cys Ala Asn Ala Ala Tyr Tyr Thr Asn Gly Ala Tyr Cys
    50                  55                  60

Cys Asn Gly Thr Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Cys Ala
65                  70                  75                  80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Cys Ala Tyr
                85                  90                  95

<210>  1004
<211>  96
<212>  PRT
<213>  Homo Sapiens

<400>  1004

Met Gly Asn Tyr Thr Asn Cys Ala Asn Ala Thr His Cys Ala Asn Ala
1               5                   10                  15

Ala Arg Gly Cys Asn Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
            20                  25                  30

Tyr Cys Ala Arg Gly Thr Asn Gly Thr Asn Tyr Thr Asn Cys Ala Asn
        35                  40                  45

Ala Thr Gly Cys Ala Asn Ala Ala Tyr Ala Thr Gly Gly Ala Tyr Cys
    50                  55                  60

Cys Asn Gly Thr Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Cys Ala
65                  70                  75                  80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Cys Ala Tyr
                85                  90                  95

<210>  1005
<211>  96
<212>  PRT
<213>  Homo Sapiens

<400>  1005

Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Met
1               5                   10                  15

Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Ala
            20                  25                  30

Tyr Trp Ser Asn Tyr Thr Asn Thr Ala Tyr Tyr Thr Asn Cys Ala Arg
        35                  40                  45

Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Met Gly Asn Gly
    50                  55                  60
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Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1006
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1006

Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Met
1 5 10 15

Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr Tyr Thr Asn Cys Ala Arg
35 40 45

Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Met Gly Asn Gly
50 55 60

Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Ala Ala Arg
85 90 95

<210> 1007
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1007

Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Met
1 5 10 15

Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr Tyr Thr Asn Cys Ala Arg
35 40 45

Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Met Gly Asn Gly
50 55 60

Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Ala
65 70 75 80

Arg Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Ala Ala Arg
85 90 95

<210> 1008
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1008

Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Met
1 5 10 15

Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser Asn Ala Thr Gly Ala Ala
20 25 30

Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr Tyr Thr Asn Cys Ala Arg
35 40 45

Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Met Gly Asn Gly
50 55 60

Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1009
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1009

Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Met
1 5 10 15

Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr Tyr Thr Asn Cys Ala Arg
35 40 45

Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Met Gly Asn Gly
50 55 60

Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1010
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1010

Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Met
1 5 10 15

Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Asn Tyr Thr Asn Thr Ala Tyr Tyr Thr Asn Cys Ala Arg
35 40 45

Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Met Gly Asn Gly
50 55 60

Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Thr Asn Tyr Thr Asn
85 90 95

<210> 1011
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1011

Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Met
1 5 10 15

Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Asn Tyr Thr Asn Gly Ala Tyr Tyr Thr Asn Cys Ala Arg
35 40 45

Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Met Gly Asn Gly
50 55 60

Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1012
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1012

Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Met
1 5 10 15

Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Ala
            20   25   30

Tyr Trp Ser Asn Tyr Thr Asn Thr Thr Tyr Tyr Thr Asn Cys Ala Arg
        35   40   45

Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Met Gly Asn Gly
    50   55   60

Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65   70   75   80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Tyr Thr Asn
                85   90   95

<210> 1013
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1013

Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Met
1   5   10   15

Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Ala
            20   25   30

Tyr Trp Ser Asn Gly Thr Asn Thr Ala Tyr Tyr Thr Asn Cys Ala Arg
        35   40   45

Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Met Gly Asn Gly
    50   55   60

Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65   70   75   80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
                85   90   95

<210> 1014
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1014

Met Gly Asn Thr Thr Tyr Cys Ala Asn Ala Thr His Trp Ser Asn Met
1   5   10   15

Gly Asn Gly Ala Tyr Ala Ala Tyr Gly Cys Asn Ala Ala Arg Ala Ala
            20   25   30

Tyr Trp Ser Asn Tyr Thr Asn Thr Ala Tyr Tyr Thr Asn Cys Ala Arg

35 40 45

Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Met Gly Asn Gly
50 55 60

Ala Tyr Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1015
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1015

Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Gly
1 5 10 15

Thr Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Ala Ala Tyr
35 40 45

Tyr Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Gly
50 55 60

Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1016
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1016

Met Gly Asn Gly Thr Asn Ala Ala Tyr Ala Thr Gly Trp Ser Asn Gly
1 5 10 15

Thr Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Ala Ala Arg
35 40 45

Tyr Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Gly
50 55 60

Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1017
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1017

Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Gly
1 5 10 15

Thr Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Ala Ala Arg
35 40 45

Tyr Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Gly
50 55 60

Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1018
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1018

Met Gly Asn Ala Thr His Cys Ala Asn Ala Thr His Trp Ser Asn Gly
1 5 10 15

Cys Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Ala Ala Arg
35 40 45

Tyr Thr Asn Ala Ala Tyr Trp Ser Asn Gly Thr Asn Cys Ala Asn Gly
50 55 60

Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn

85 90 95

<210> 1019
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1019

Met Gly Asn Ala Thr His Cys Ala Asn Ala Ala Arg Trp Ser Asn Gly
1 5 10 15

Thr Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Ala Ala Arg
35 40 45

Tyr Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Gly
50 55 60

Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1020
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1020

Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Gly
1 5 10 15

Thr Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Ala Ala Arg
35 40 45

Tyr Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Gly
50 55 60

Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Trp Ser Asn
85 90 95

<210> 1021
<211> 96
<212> PRT

<213> Homo Sapiens

<400> 1021

Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Gly
1 5 10 15

Thr Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Ala Ala Arg
35 40 45

Tyr Thr Asn Thr Thr Tyr Trp Ser Asn Gly Thr Asn Cys Ala Asn Gly
50 55 60

Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Thr Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1022
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1022

Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr Gly Trp Ser Asn Gly
1 5 10 15

Thr Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Ala Ala Arg
35 40 45

Tyr Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Gly
50 55 60

Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1023
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1023

Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Ala
1 5 10 15

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Thr His Gly Thr Asn Cys Ala Asn Trp Ser Asn Met Gly Asn Ala Ala
            20                  25                  30

Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Ala Ala Arg
        35                  40                  45

Tyr Thr Asn Trp Ser Asn Trp Ser Asn Gly Thr Asn Cys Ala Asn Gly
    50                  55                  60

Cys Asn Gly Cys Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65                  70                  75                  80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
                85                  90                  95
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<210> 1024
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1024

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Cys Ala Arg Gly Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Gly
1               5                   10                  15

Cys Asn Gly Ala Tyr Ala Ala Arg Trp Ser Asn Ala Thr His Trp Ser
            20                  25                  30

Asn Cys Ala Asn Gly Cys Asn Thr Ala Tyr Tyr Thr Asn Cys Ala Arg
        35                  40                  45

Thr Gly Gly Trp Ser Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Gly
    50                  55                  60

Cys Asn Trp Ser Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Ala Thr
65                  70                  75                  80

Gly Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
                85                  90                  95
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<210> 1025
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1025

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Cys Ala Arg Gly Thr Asn Cys Ala Asn Ala Thr His Trp Ser Asn Gly
1               5                   10                  15

Cys Asn Gly Ala Tyr Ala Ala Arg Trp Ser Asn Ala Thr His Ala Ala
            20                  25                  30
```

Tyr Cys Ala Asn Gly Cys Asn Thr Ala Tyr Tyr Thr Asn Cys Ala Arg
35 40 45

Thr Gly Gly Trp Ser Asn Trp Ser Asn Tyr Thr Asn Ala Ala Arg Gly
50 55 60

Cys Asn Trp Ser Asn Gly Ala Tyr Cys Ala Asn Gly Cys Asn Ala Thr
65 70 75 80

Gly Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1026
<211> 96
<212> PRT
<213> Homo Sapiens

<400> 1026

Met Gly Asn Ala Thr His Cys Ala Asn Ala Thr His Ala Ala Tyr Cys
1 5 10 15

Cys Asn Gly Ala Tyr Cys Ala Asn Trp Ser Asn Ala Ala Arg Ala Ala
20 25 30

Tyr Cys Ala Arg Thr Thr Tyr Trp Ser Asn Tyr Thr Asn Cys Ala Arg
35 40 45

Tyr Thr Asn Ala Ala Tyr Trp Ser Asn Gly Thr Asn Cys Ala Asn Cys
50 55 60

Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65 70 75 80

Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
85 90 95

<210> 1027
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 1027

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Tyr
1 5 10 15

Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser
20 25 30

Asn

<210> 1028
<211> 33

<212> PRT
<213> Homo Sapiens

<400> 1028

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Cys
1 5 10 15

Ala Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser
20 25 30

Asn

<210> 1029
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 1029

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Ala
1 5 10 15

Thr Gly Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser
20 25 30

Asn

<210> 1030
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 1030

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Trp Ser Asn Tyr
1 5 10 15

Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Cys Cys
20 25 30

Asn

<210> 1031
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 1031

Thr Gly Gly Gly Gly Asn Cys Ala Arg Gly Gly Asn Cys Ala Asn Ala
1 5 10 15

Ala Arg Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser
20 25 30

Asn

<210> 1032
<211> 33
<212> PRT
<213> Homo Sapiens

<400> 1032

Thr Gly Gly Gly Gly Asn Met Gly Asn Gly Gly Asn Cys Ala Asn Tyr
1 5 10 15

Thr Asn Gly Thr Asn Cys Ala Asn Gly Thr Asn Trp Ser Asn Trp Ser
20 25 30

Asn

<210> 1033
<211> 16
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> X1 is selected from the group consisting of H and LI

<400> 1033

Xaa Ile Phe Ser Asn Asp Glu Lys Ser Tyr Ser Thr Ser Leu Lys Ser
1 5 10 15

<210> 1034
<211> 16
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> X1 is selected from the group consisting of D and V

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> X2 is selected from the group consisting of D and E

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> X3 is selected from the group consisting of K and R

<400> 1034

Leu Ile Tyr Trp Asn Xaa Xaa Lys Arg Tyr Ser Pro Ser Leu Xaa Ser
1 5 10 15

<210> 1035
<211> 13
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> X1 is selected from the group consisting of E and S

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X2 is selected from the group consisting of D, G and no amino acid

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> X3 is selected from the group consisting of D, N and no amino acid

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> X4 is selected from the group consisting of G and no amino acid

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> X5 is selected from the group consisting of G and no amino acid

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> X6 is selected from the group consisting of W, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> X7 is selected from the group consisting of I, N and Y

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> X8 is selected from the group consisting of A and Y

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> X9 is selected from the group consisting of G, V and Y

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> X10 is selected from the group consisting of A, F and G

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> X11 is selected from the group consisting of F, L and M

<220>
<221> MISC_FEATURE
<222> (13)..(13)

<223> X12 is selected from the group consisting of V and Y

<400> 1035

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Asp Xaa
1 5 10

<210> 1036
<211> 18
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X1 is selected from the group consisting of G and no amino acid

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> X2 is selected from the group consisting of K, L and Y

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> X3 is selected from the group consisting of A, G and S

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> X4 is selected from the group consisting of S, V and Y

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> X5 is selected from the group consisting of A and G

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> X6 is selected from the group consisting of G and no amino acid

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> X7 is selected from the group consisting of T and no amino acid

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> X8 is selected from the group consisting of S and no amino acid

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> X9 is selected from the group consisting of Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> X10 is selected from the group consisting of W and Y

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> X11 is selected from the group consisting of G, S and Y

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> X12 is selected from the group consisting of F and Y

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> X13 is selected from the group consisting of G and no amino acid

<220>
<221> MISC_FEATURE
<222> (16)..(16)
<223> X14 is selected from the group consisting of M and no amino acid

<220>
<221> MISC_FEATURE
<222> (18)..(18)
<223> X15 is selected from the group consisting of V and Y

<400> 1036

Gln Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Xaa Xaa Xaa
1 5 10 15

Asp Xaa

<210> 1037
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> X1 is selected from the group consisting of D, G, L, S and no amino acid

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X2 is selected from the group consisting of G, H, W, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> X3 is selected from the group consisting of A, F, W, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> X4 is selected from the group consisting of D, G, Q, T and no amino acid

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> X5 is selected from the group consisting of G, I, Q, S and no amino acid

<220>

<221> MISC_FEATURE
<222> (6)..(6)
<223> X6 is selected from the group consisting of A, D, N, Q, S and no amino acid

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> X7 is selected from the group consisting of G, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> X8 is selected from the group consisting of D, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> X9 is selected from the group consisting of Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> X10 is selected from the group consisting of A, E, N and Y

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> X11 is selected from the group consisting of G, P, T, V and Y

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> X12 is selected from the group consisting of F and I

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> X13 is selected from the group consisting of D and Q

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> X14 is selected from the group consisting of C, H, V and Y

<400> 1037

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10

<210> 1038
<211> 19
<212> PRT
<213> Homo sapiens

<220>
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<222> (1)..(1)
<223> X1 is selected from the group consisting of E, D and no amino acid

<220>
<221> MISC_FEATURE
<222> (2)..(2)

<223> X2 is selected from the group consisting of G, R and no amino acid

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> X3 is selected from the group consisting of I, V, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> X4 is selected from the group consisting of A, G, L and N

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> X5 is selected from the group consisting of A, G, V and W

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> X6 is selected from the group consisting of A, N, R and T

<220>
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<222> (7)..(7)
<223> X7 is selected from the group consisting of G, N, P and no amino acid

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> X8 is selected from the group consisting of G, T and no amino acid

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> X9 is selected from the group consisting of A and no amino acid

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> X10 is selected from the group consisting of D, E and no amino acid

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> X11 is selected from the group consisting of S, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> X12 is selected from the group consisting of G, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> X13 is selected from the group consisting of N, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (14)..(14)

<223> X14 is selected from the group consisting of Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> X15 is selected from the group consisting of D, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (16)..(16)
<223> X16 is selected from the group consisting of A, G and no amino acid

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> X17 is selected from the group consisting of F and M

<220>
<221> MISC_FEATURE
<222> (19)..(19)
<223> X18 is selected from the group consisting of I, V and Y

<400> 1038

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Asp Xaa

<210> 1039
<211> 23
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> X1 is selected from the group consisting of A, D, G, S and T

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X2 is selected from the group consisting of A, E, G, L, N, R, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> X3 is selected from the group consisting of A, G, L, N, R, T, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> X4 is selected from the group consisting of D, G, R, S, V, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> X5 is selected from the group consisting of A, G, I, S, V, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> X6 is selected from the group consisting of F, G, L, R, V and no amino acid

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> X7 is selected from the group consisting of L, T, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> X8 is selected from the group consisting of Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> X9 is selected from the group consisting of Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> X10 is selected from the group consisting of D and no amino acid

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> X11 is selected from the group consisting of S and no amino acid

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> X12 is selected from the group consisting of S and no amino acid

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> X13 is selected from the group consisting of G and no amino acid

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> X14 is selected from the group consisting of D, L, M, S, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> X15 is selected from the group consisting of H, I, P, V, W and no amino acid

<220>
<221> MISC_FEATURE
<222> (16)..(16)
<223> X16 is selected from the group consisting of F, G, L, R, S, Y and no amino acid

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> X17 is selected from the group consisting of D, F, V, W, Y and no amino acid

<220>

<221> MISC_FEATURE
<222> (18)..(18)
<223> X18 is selected from the group consisting of C, F, L, P, S and Y

<220>
<221> MISC_FEATURE
<222> (19)..(19)
<223> X19 is selected from the group consisting of D, F, G and Y

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> X20 is selected from the group consisting of A, C, G, P, R, V and Y

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> X21 is selected from the group consisting of F, L, M, S and no amino acid

<220>
<221> MISC_FEATURE
<222> (22)..(22)
<223> X22 is selected from the group consisting of A, D and no amino acid

<220>
<221> MISC_FEATURE
<222> (23)..(23)
<223> X23 is selected from the group consisting of I, L, V, Y and no amino acid

<400> 1039

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20

<210> 1040
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> X1 is selected from the group consisting of M and V

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> X2 is selected from the group consisting of S and no amino acid

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> X3 is selected from the group consisting of F and no amino acid

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> X4 is selected from the group consisting of V and no amino acid

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> X5 is selected from the group consisting of F and M

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> X6 is selected from the group consisting of V and Y

<400> 1040

Xaa Tyr Ser Ser Gly Trp Xaa Xaa Tyr Gly Xaa Xaa Asp Xaa
1 5 10

<210> 1041
<211> 8
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X1 is selected from the group consisting of G, H, L, N and R

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> X2 is selected from the group consisting of E, T and W

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> X3 is selected from the group consisting of L, N, T and V

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> X4 is selected from the group consisting of D and E

<400> 1041

Arg Xaa Xaa Xaa Pro Phe Xaa Tyr
1 5

<210> 1042
<211> 208
<212> PRT
<213> Homo sapiens

<400> 1042

Met Lys Leu Leu Pro Ser Val Val Leu Lys Leu Phe Leu Ala Ala Val
1 5 10 15

Leu Ser Ala Leu Val Thr Gly Glu Ser Leu Glu Arg Leu Arg Arg Gly
20 25 30

Leu Ala Ala Gly Thr Ser Asn Pro Asp Pro Pro Thr Val Ser Thr Asp
35 40 45

```
Gln Leu Leu Pro Leu Gly Gly Gly Arg Asp Arg Lys Val Arg Asp Leu
    50                  55                  60

Gln Glu Ala Asp Leu Asp Leu Leu Arg Val Thr Leu Ser Ser Lys Pro
65                  70                  75                  80

Gln Ala Leu Ala Thr Pro Asn Lys Glu Glu His Gly Lys Arg Lys Lys
                85                  90                  95

Lys Gly Lys Gly Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr
            100                 105                 110

Lys Asp Phe Cys Ile His Gly Glu Cys Lys Tyr Val Lys Glu Leu Arg
        115                 120                 125

Ala Pro Ser Cys Ile Cys His Pro Gly Tyr His Gly Glu Arg Cys His
    130                 135                 140

Gly Leu Ser Leu Pro Val Glu Asn Arg Leu Tyr Thr Tyr Asp His Thr
145                 150                 155                 160

Thr Ile Leu Ala Val Val Ala Val Val Leu Ser Ser Val Cys Leu Leu
                165                 170                 175

Val Ile Val Gly Leu Leu Met Phe Arg Tyr His Arg Arg Gly Gly Tyr
            180                 185                 190

Asp Val Glu Asn Glu Glu Lys Val Lys Leu Gly Met Thr Asn Ser His
        195                 200                 205


<210>  1043
<211>  19
<212>  PRT
<213>  Homo sapiens

<400>  1043

Met Lys Leu Leu Pro Ser Val Val Leu Lys Leu Phe Leu Ala Ala Val
1               5                   10                  15

Leu Ser Ala



<210>  1044
<211>  149
<212>  PRT
<213>  Homo sapiens

<400>  1044

Met Lys Leu Leu Pro Ser Val Val Leu Lys Leu Phe Leu Ala Ala Val
1               5                   10                  15

Leu Ser Ala Leu Val Thr Gly Glu Ser Leu Glu Arg Leu Arg Arg Gly
            20                  25                  30
```

```
Leu Ala Ala Gly Thr Ser Asn Pro Asp Pro Pro Thr Val Ser Thr Asp
        35                  40                  45

Gln Leu Leu Pro Leu Gly Gly Gly Arg Asp Arg Lys Val Arg Asp Leu
    50                  55                  60

Gln Glu Ala Asp Leu Asp Leu Leu Arg Val Thr Leu Ser Ser Lys Pro
65                  70                  75                  80

Gln Ala Leu Ala Thr Pro Asn Lys Glu Glu His Gly Lys Arg Lys Lys
                85                  90                  95

Lys Gly Lys Gly Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr
            100                 105                 110

Lys Asp Phe Cys Ile His Gly Glu Cys Lys Tyr Val Lys Glu Leu Arg
        115                 120                 125

Ala Pro Ser Cys Ile Cys His Pro Gly Tyr His Gly Glu Arg Cys His
    130                 135                 140

Gly Leu Ser Leu Pro
145
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<210> 1045
<211> 87
<212> PRT
<213> Homo sapiens

<400> 1045

```
Asp Leu Gln Glu Ala Asp Leu Asp Leu Leu Arg Val Thr Leu Ser Ser
1               5                   10                  15

Lys Pro Gln Ala Leu Ala Thr Pro Asn Lys Glu Glu His Gly Lys Arg
            20                  25                  30

Lys Lys Lys Gly Lys Gly Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg
        35                  40                  45

Lys Tyr Lys Asp Phe Cys Ile His Gly Glu Cys Lys Tyr Val Lys Glu
    50                  55                  60

Leu Arg Ala Pro Ser Cys Ile Cys His Pro Gly Tyr His Gly Glu Arg
65                  70                  75                  80

Cys His Gly Leu Ser Leu Pro
                85
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<210> 1046
<211> 43
<212> PRT

<213> Homo sapiens

<400> 1046

Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys Ile His Gly Glu Cys Lys
1 5 10 15

Tyr Val Lys Glu Leu Arg Ala Pro Ser Cys Ile Cys His Pro Gly Tyr
20 25 30

His Gly Glu Arg Cys His Gly Leu Ser Leu Pro
35 40

<210> 1047
<211> 149
<212> PRT
<213> Homo sapiens

<400> 1047

Met Lys Leu Leu Pro Ser Val Val Leu Lys Leu Phe Leu Ala Ala Val
1 5 10 15

Leu Ser Ala Leu Val Thr Gly Glu Ser Leu Glu Arg Leu Arg Arg Gly
20 25 30

Leu Ala Ala Gly Thr Ser Asn Pro Asp Pro Pro Thr Val Ser Thr Asp
35 40 45

Gln Leu Leu Pro Leu Gly Gly Gly Arg Asp Arg Lys Val Arg Asp Leu
50 55 60

Gln Glu Ala Asp Leu Asp Leu Leu Arg Val Thr Leu Ser Ser Lys Pro
65 70 75 80

Gln Ala Leu Ala Thr Pro Asn Lys Glu Glu His Gly Lys Arg Lys Lys
85 90 95

Lys Gly Lys Gly Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr
100 105 110

Lys Asp Phe Cys Ile His Gly Glu Cys Lys Tyr Val Lys Glu Leu Arg
115 120 125

Ala Pro Ser Cys Ile Cys His Pro Gly Tyr His Gly Glu Arg Cys His
130 135 140

Gly Leu Ser Leu Pro
145

<210> 1048
<211> 32
<212> DNA
<213> Artificial

<220>
<223> forward primer

<400> 1048
gggttaacgc caccatgaag ctgctgccgt cg 32

<210> 1049
<211> 28
<212> DNA
<213> Artificial

<220>
<223> reverse primer

<400> 1049
ccgctcgagg tgggaattag tcatgccc 28

<210> 1050
<211> 31
<212> DNA
<213> Artificial

<220>
<223> forward primer

<400> 1050
ggaattcgcc accatgaagc tgctgccgtc g 31

<210> 1051
<211> 30
<212> DNA
<213> Artificial

<220>
<223> reverse primer

<400> 1051
ccgctcgagg tgggagctag cagccacgcc 30

<210> 1052
<211> 44
<212> PRT
<213> Homo sapiens

<400> 1052

Asp Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys Ile His Gly Glu Cys
1 5 10 15

Lys Tyr Val Lys Glu Leu Arg Ala Pro Ser Cys Ile Cys His Pro Gly
20 25 30

Tyr His Gly Glu Arg Cys His Gly Leu Ser Leu Pro
35 40

<210> 1053
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1053

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Tyr Cys
1   5   10   15

Ile His Gly Glu Cys Lys Tyr Val Lys Glu Leu Arg Ala Pro Ser Cys
            20   25   30

Ile Cys His Pro Gly Tyr His Gly Glu Arg Cys His Gly Leu Ser Leu
        35   40   45

Pro

<210> 1054
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1054

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys
1   5   10   15

Ile His Gly Glu Cys Lys Tyr Val Lys Glu Phe Arg Ala Pro Ser Cys
            20   25   30

Ile Cys His Pro Gly Tyr His Gly Glu Arg Cys His Gly Leu Ser Leu
        35   40   45

Pro

<210> 1055
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1055

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys
1   5   10   15

Ile His Gly Glu Cys Lys Tyr Val Lys Glu Leu Arg Ala Pro Ser Cys
            20   25   30

Ile Cys His Pro Gly Tyr His Gly His Arg Cys His Gly Leu Ser Leu
        35   40   45

Pro

<210> 1056
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1056

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys
1 5 10 15

Ile His Gly Glu Cys Arg Tyr Leu Gln Glu Leu Arg Ala Pro Ser Cys
20 25 30

Ile Cys His Pro Gly Tyr His Gly Glu Arg Cys His Gly Leu Ser Leu
35 40 45

Pro

<210> 1057
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1057

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Tyr Cys
1 5 10 15

Ile His Gly Glu Cys Arg Tyr Leu Gln Glu Leu Arg Ala Pro Ser Cys
20 25 30

Ile Cys His Pro Gly Tyr His Gly Glu Arg Cys His Gly Leu Ser Leu
35 40 45

Pro

<210> 1058
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1058

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys
1 5 10 15

Ile His Gly Glu Cys Arg Tyr Leu Gln Glu Leu Arg Ala Pro Ser Cys
20 25 30

Ile Cys His Pro Gly Tyr His Gly His Arg Cys His Gly Leu Ser Leu
35 40 45

Pro

<210> 1059
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1059

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys
1 5 10 15

Ile His Gly Glu Cys Lys Tyr Val Lys Glu Leu Arg Ala Pro Ser Cys
20 25 30

Lys Cys Leu Pro Gly Tyr His Gly Glu Arg Cys His Gly Leu Ser Leu
35 40 45

Pro

<210> 1060
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1060

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Tyr Cys
1 5 10 15

Ile His Gly Glu Cys Lys Tyr Val Lys Glu Leu Arg Ala Pro Ser Cys
20 25 30

Lys Cys Leu Pro Gly Tyr His Gly Glu Arg Cys His Gly Leu Ser Leu
35 40 45

Pro

<210> 1061
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1061

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys
1 5 10 15

Ile His Gly Glu Cys Lys Tyr Val Lys Glu Phe Arg Ala Pro Ser Cys
20 25 30

Lys Cys Leu Pro Gly Tyr His Gly Glu Arg Cys His Gly Leu Ser Leu
35 40 45

Pro

<210> 1062
<211> 49
<212> PRT

<213> Homo sapiens

<400> 1062

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys
1 5 10 15

Ile His Gly Glu Cys Lys Tyr Val Lys Glu Leu Arg Ala Pro Ser Cys
20 25 30

Ile Cys His Pro Gly Tyr His Gly Glu Arg Cys His Gly Leu Ser Thr
35 40 45

Pro

<210> 1063
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1063

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys
1 5 10 15

Ile His Gly Glu Cys Lys Tyr Val Lys Glu Leu Arg Ala Pro Ser Cys
20 25 30

Ile Cys His Pro Gly Tyr His Gly His Arg Cys His Gly Leu Ser Thr
35 40 45

Pro

<210> 1064
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1064

Leu Gly Lys Lys Arg Asp Pro Cys Leu Arg Lys Tyr Lys Asp Phe Cys
1 5 10 15

Leu His Asp Gly Val Cys Lys Tyr Val Lys Glu Leu Arg Ala Pro Ser
20 25 30

Cys Ile Cys His Pro Gly Tyr His Gly Glu Arg Cys His Gly Leu Ser
35 40 45

Leu Pro
50

<210> 1065
<211> 214

<212> PRT
<213> Homo Sapiens

<400> 1065

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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 Thr 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 Leu Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Phe Ala Ser Tyr Tyr Cys Gln Gln Ser Phe Tyr Thr Pro Ile
                85                  90                  95

Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210
```

<210> 1066
<211> 23
<212> PRT
<213> Homo Sapiens

<400> 1066

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
20

<210> 1067
<211> 23
<212> PRT
<213> Homo Sapiens

<400> 1067

Asn Ile Val Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
1 5 10 15

Gln Pro Ala Ser Ile Ser Cys
20

<210> 1068
<211> 23
<212> PRT
<213> Homo Sapiens

<400> 1068

Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Thr Val Ser Leu Gly
1 5 10 15

Glu Arg Ala Thr Ile Asn Cys
20

<210> 1069
<211> 23
<212> PRT
<213> Homo Sapiens

<400> 1069

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Gly Val Thr Ile Thr Cys
20

<210> 1070
<211> 23
<212> PRT
<213> Homo Sapiens

<400> 1070

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Ala Ile Thr Cys
20

<210> 1071
<211> 23
<212> PRT
<213> Homo Sapiens

<400> 1071

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
20

<210> 1072
<211> 23
<212> PRT
<213> Homo Sapiens

<400> 1072

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Arg Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys
20

<210> 1073
<211> 23
<212> PRT
<213> Homo Sapiens

<400> 1073

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys
20

<210> 1074
<211> 15
<212> PRT
<213> Homo Sapiens

<400> 1074

Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr
1 5 10 15

<210> 1075
<211> 32
<212> PRT
<213> Homo Sapiens

<400> 1075

Arg Phe Thr Val Ser Arg Asp Asn Ser Lys Asn Thr Leu Phe Leu Gln
1 5 10 15

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg

20 25 30

<210> 1076
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 1076

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr
65

<210> 1077
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 1077

Gly Ala Arg Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Cys Ala Asn Cys Cys Asn Tyr Thr Asn Trp Ser Asn Trp Ser
20 25 30

Asn Cys Cys Asn Gly Thr Asn Cys Ala Asn Tyr Thr Asn Gly Gly Asn
35 40 45

Cys Ala Arg Cys Cys Asn Gly Cys Asn Trp Ser Asn Ala Thr His Trp
50 55 60

Ser Asn Thr Gly Tyr
65

<210> 1078
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 1078

Gly Ala Tyr Ala Thr His Gly Thr Asn Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Gly Ala Tyr Trp Ser Asn Tyr Thr
            20   25   30

Asn Gly Cys Asn Gly Thr Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
        35   40   45

Gly Ala Arg Met Gly Asn Gly Cys Asn Cys Ala Asn Ala Thr His Ala
    50   55   60

Ala Tyr Thr Gly Tyr
65

<210> 1079
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 1079

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1   5   10   15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Met Gly
            20   25   30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35   40   45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50   55   60

Ala Asn Thr Gly Tyr
65

<210> 1080
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 1080

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1   5   10   15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
            20   25   30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
        35   40   45

Gly Ala Tyr Gly Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
    50   55   60

Ala Asn Thr Gly Tyr
65

<210> 1081
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 1081

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr
65

<210> 1082
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 1082

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr
20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Gly Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Gly Cys Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr
65

<210> 1083
<211> 69
<212> PRT
<213> Homo Sapiens

<400> 1083

Gly Ala Tyr Ala Thr His Cys Ala Arg Ala Thr Gly Cys Ala Asn Cys
1 5 10 15

Ala Arg Trp Ser Asn Cys Cys Asn Trp Ser Asn Trp Ser Asn Tyr Thr

20 25 30

Asn Trp Ser Asn Gly Cys Asn Trp Ser Asn Tyr Thr Asn Gly Gly Asn
35 40 45

Gly Ala Tyr Met Gly Asn Gly Thr Asn Cys Ala Asn Ala Thr His Cys
50 55 60

Ala Asn Thr Gly Tyr
65

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<400> 1084

Thr Gly Gly Thr Thr Tyr Cys Ala Arg Cys Ala Arg Met Gly Asn Cys
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Cys Asn Gly Gly Asn Cys Ala Arg Trp Ser Asn Cys Cys Asn Met Gly
20 25 30

Asn Met Gly Asn Tyr Thr Asn Ala Thr His Thr Ala Tyr
35 40 45

<210> 1085
<211> 75
<212> PRT
<213> Homo Sapiens

<400> 1085

Cys Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Gly
1 5 10 15

Ala Arg Trp Ser Asn Gly Gly Asn Cys Cys Asn Gly Gly Asn Tyr Thr
20 25 30

Asn Gly Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Cys Ala Arg
35 40 45

Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
50 55 60

Gly Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn
65 70 75

<210> 1086
<211> 75
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<213> Homo Sapiens

<400> 1086

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Gly Ala Arg Gly Thr Asn Cys Ala Arg Tyr Thr Asn Cys Ala Arg Cys
1               5                   10                  15


Ala Arg Thr Gly Gly Gly Gly Asn Gly Cys Asn Gly Gly Asn Tyr Thr
            20                  25                  30


Asn Tyr Thr Asn Ala Ala Arg Cys Cys Asn Trp Ser Asn Gly Ala Arg
        35                  40                  45


Cys Ala Asn Tyr Thr Asn Trp Ser Asn Tyr Thr Asn Cys Ala Asn Thr
    50                  55                  60


Gly Tyr Gly Cys Asn Gly Thr Asn Thr Ala Tyr
65                  70                  75


<210>  1087
<211>  42
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<400>  1087

Thr Gly Gly Gly Thr Asn Met Gly Asn Cys Ala Arg Gly Cys Asn Cys
1               5                   10                  15


Cys Asn Gly Gly Asn Ala Ala Arg Gly Gly Asn Tyr Thr Asn Gly Ala
            20                  25                  30


Arg Thr Gly Gly Gly Thr Asn Trp Ser Asn
        35                  40


<210>  1088
<211>  96
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<213>  Homo Sapiens

<400>  1088

Met Gly Asn Thr Thr Tyr Cys Ala Asn Gly Thr Asn Trp Ser Asn Met
1               5                   10                  15


Gly Asn Gly Ala Tyr Ala Ala Tyr Trp Ser Asn Ala Ala Arg Ala Ala
            20                  25                  30


Tyr Cys Ala Asn Tyr Thr Asn Thr Thr Tyr Tyr Thr Asn Cys Ala Arg
        35                  40                  45


Ala Thr Gly Ala Ala Tyr Trp Ser Asn Tyr Thr Asn Met Gly Asn Gly
    50                  55                  60


Cys Asn Gly Ala Arg Gly Ala Tyr Cys Ala Asn Gly Cys Asn Gly Thr
65                  70                  75                  80


Asn Thr Ala Tyr Thr Ala Tyr Thr Gly Tyr Gly Cys Asn Met Gly Asn
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<400> 1089

Xaa Gln Xaa Xaa Xaa Xaa Pro Xaa Xaa
1 5

<210> 1090
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<213> Homo sapiens

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<400> 1090

Gln Gln Xaa Xaa Xaa Xaa Xaa Ile Thr
1 5

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<400> 1091

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Thr
1 5

<210> 1092
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<400> 1092

Gln Xaa Xaa Asp Xaa Leu Pro Xaa Xaa
1 5

<210> 1093
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Gln Gln Xaa Xaa Xaa Xaa Pro Xaa Xaa Xaa
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Xaa Gln Tyr Xaa Xaa Xaa Xaa Xaa Xaa Phe
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<400> 1095

Gly Tyr Thr Xaa Thr Xaa Xaa Xaa Xaa Xaa
1 5 10

<210> 1096
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<210> 1098
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Ile Ile Tyr Pro Xaa Asp Ser Asp Xaa Arg Tyr Ser Pro Ser Phe Gln
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Gly

<210> 1103
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Gly

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1 5 10 15

Gly

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Lys Ser

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<400> 1106

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1 5 10 15

<210> 1107
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<400> 1107

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1 5 10

<210> 1108
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Lys Ser Ser Gln Xaa Xaa Leu Xaa Xaa Ser Asn Asn Lys Asn Tyr Leu
1 5 10 15

Xaa

<210> 1112
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Xaa Xaa Ser Xaa Leu Gln Ser
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Trp Ala Ser Xaa Arg Glu Ser
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