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<110> Regeneron Pharmaceuticals, Inc.

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<150> US 62/222,605
<151> 2015-09-23

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<170> PatentIn version 3.5

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        35                  40                  45


Ser Gly Ile Ser Trp Asn Ser Gly Ser Lys Gly 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 Leu Tyr Tyr Cys
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Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
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            20                  25                  30


Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45


Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
                85                  90                  95


Ala Lys Asp Gly Ser Gly Tyr Gly Tyr Phe Tyr Tyr Tyr Gly Met Asp
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35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
85 90 95

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100 105 110

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Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
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Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
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20 25 30

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35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
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Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
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gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300

agtggttatg gcaagtttta tcattatgga ctggacgtgt ggggacaagg gacaacagtg 360

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20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Lys Gly 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
100 105 110

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20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Lys Gly 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 Leu Tyr Tyr Cys
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Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
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gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

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agtggttatg gcaagtttta tcattatgga atggacgtgt ggggacaagg gacaacagtg 360

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
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Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Lys Gly Tyr Ala Asp Ser Val
50 55 60

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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 Leu Tyr Tyr Cys
                85                  90                  95


Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
            100                 105                 110


Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120


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1 5 10 15

Val

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cctggtaaag gattggaatg ggttagcggg atatcatgga actcaggaag catcggatac 180

gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300

agtggttatg gcaagtttta tcattatgga ctggacgtgt ggggacaagg gacaacagtg 360

acagtgagta gc 372

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<400> 74

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

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<400> 77
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<400> 78

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1 5

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Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp

1 5 10 15

Val

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gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc 300

agtggttatg gcaagtttta ttattatgga ctggacgtgt ggggacaagg gacaacagtg 360

acagtgagta gc 372

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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1 5

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<400> 86

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1 5

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<400> 88

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
1 5 10 15

Val

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cctggtaaag gattggaatg ggttagcggg atatcatgga actcaggaag catcggatac 180

gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc 300

agtggttatg gcaagtttta tcattatgga atggacgtgt ggggacaagg gacaacagtg 360

acagtgagta gc 372

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<400> 90

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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<400> 92

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 93
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<400> 93
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<400> 94

Ile Ser Trp Asn Ser Gly Ser Ile
1 5

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<400> 96

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
1 5 10 15

Val

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cctggtaaag gattggaatg ggttagcggg atatcatgga actcaggaag caagggatac 180

gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300

agtggttatg gcaagtttta ttattatgga ctggacgtgt ggggacaagg gacaacagtg 360

acagtgagta gc 372

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<400> 98

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30


Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45


Ser Gly Ile Ser Trp Asn Ser Gly Ser Lys Gly 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 Leu Tyr Tyr Cys
                85                  90                  95


Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
            100                 105                 110


Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120


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<400> 100

Gly Phe Thr Phe Asp Asp Tyr Ser
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<212> DNA
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<220>
<223> synthetic

<400> 101
atatcatgga actcaggaag caag 24

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<400> 102

Ile Ser Trp Asn Ser Gly Ser Lys
1 5

<210> 103
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<400> 103
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<220>
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<400> 104

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
1 5 10 15

Val

<210> 105
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<400> 105
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cctggtaaag gattggaatg ggttagcggg atatcatgga actcaggaag caagggatac 180

gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300

agtggttatg gcaagtttta tcattatgga atggacgtgt ggggacaagg gacaacagtg 360

acagtgagta gc 372

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<213> Artificial Sequence

<220>
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<400> 106

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Lys Gly 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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<400> 108

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

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Ile Ser Trp Asn Ser Gly Ser Lys
1 5

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<210> 112
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<400> 112

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
1 5 10 15

Val

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cctggtaaag gattggaatg ggttagcggg atatcatgga actcaggaag caagggatac 180

gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc 300

agtggttatg gcaagtttta ttattatgga atggacgtgt ggggacaagg gacaacagtg 360

acagtgagta gc 372

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<220>
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<400> 114

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1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Lys Gly 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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<400> 116

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

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<400> 118

Ile Ser Trp Asn Ser Gly Ser Lys
1 5

<210> 119
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Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
1 5 10 15

Val

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cctggtaaag gattggaatg ggttagcggg atatcatgga actcaggaag catcggatac 180

gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300

agtggttatg gcaagtttta ttattatgga ctggacgtgt ggggacaagg gacaacagtg 360

acagtgagta gc 372

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<400> 122

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1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

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1 5

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Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Leu Asp
1 5 10 15

Val

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cctggtaaag gattggaatg ggttagcggg atatcatgga actcaggaag catcggatac 180

gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300

agtggttatg gcaagtttta tcattatgga atggacgtgt ggggacaagg gacaacagtg 360

acagtgagta gc 372

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<400> 130

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1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

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Ile Ser Trp Asn Ser Gly Ser Ile
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<210> 136
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1 5 10 15

Val

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gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaatacggc 300

agtggttatg gcaagtttta ttattatgga atggacgtgt ggggacaagg gacaacagtg 360

acagtgagta gc 372

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1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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Gly Phe Thr Phe Asp Asp Tyr Ser
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Ile Ser Trp Asn Ser Gly Ser Ile
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<210> 143
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<213> Artificial Sequence

<220>
<223> synthetic

<400> 144

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
1 5 10 15

Val

<210> 145
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 145

gaagtacagc ttgtagaatc cggcggagga ctggtacaac ctggaagaag tcttagactg 60

agttgcgcag ctagtgggtt tacattcgac gattacagca tgcattgggt gaggcaagct 120

cctggtaaag gattggaatg ggttagcggg atatcatgga actcaggaag caagggatac 180

gccgacagcg tgaaaggccg atttacaata tctagggaca acgcaaaaaa ctctctctac 240

cttcaaatga actctcttag ggcagaagac acagcattgt attattgcgc aaaagacggc 300

agtggttatg gcaagtttta ttattatgga atggacgtgt ggggacaagg gacaacagtg 360

acagtgagta gc 372

<210> 146
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 146

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Lys Gly 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 147
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 147
gggtttacat tcgacgatta cagc 24

<210> 148
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 148

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 149
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 149
atatcatgga actcaggaag caag 24

<210> 150

<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 150

Ile Ser Trp Asn Ser Gly Ser Lys
1 5

<210> 151
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 151
gcaaaagacg gcagtggtta tggcaagttt tattattatg gaatggacgt g 51

<210> 152
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 152

Ala Lys Asp Gly Ser Gly Tyr Gly Lys Phe Tyr Tyr Tyr Gly Met Asp
1 5 10 15

Val

<210> 153
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 153
gaagtgcagc tggtggagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60

tcctgtgtag cctctggatt cacctttgat gattattcca tgcactgggt ccggcaagct 120

ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag caaagactat 180

gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240

ctgcaaatga acagtctgag agctgaagac acggccttgt attactgtgc aaaatatgga 300

agtggctacg ggaagttcta ccactacggt ttggacgtct ggggccaagg gaccacggtc 360

accgtctcct ca 372

<210> 154
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 154

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Lys Asp 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 155
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 155
ggattcacct ttgatgatta ttcc 24

<210> 156
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 156

Gly Phe Thr Phe Asp Asp Tyr Ser
1 5

<210> 157
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 157

attagttgga atagtggtag caaa 24

<210> 158
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 158

Ile Ser Trp Asn Ser Gly Ser Lys
1 5

<210> 159
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 159
gcaaaatatg gaagtggcta cgggaagttc taccactacg gtttggacgt c 51

<210> 160
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 160

Ala Lys Tyr Gly Ser Gly Tyr Gly Lys Phe Tyr His Tyr Gly Leu Asp
1 5 10 15

Val

<210> 161

<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 161
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattagc agctatttaa attggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccgtca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcaacag agttacagta cccctccgat caccttcggc 300

caagggacac gactggagat taaa 324

<210> 162
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 162

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro

65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Pro
85 90 95

Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

<210> 163
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 163
cagagcatta gcagctat 18

<210> 164
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 164

Gln Ser Ile Ser Ser Tyr
1 5

<210> 165
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 165
gctgcatcc 9

<210> 166
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 166

Ala Ala Ser
1

<210> 167
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 167
caacagagtt acagtacccc tccgatcacc 30

<210> 168
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 168

Gln Gln Ser Tyr Ser Thr Pro Pro Ile Thr
1 5 10

<210> 169
<211> 207
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 169

```
Met Gln Ser Gly Thr His Trp Arg Val Leu Gly Leu Cys Leu Leu Ser
1               5                  10                  15

Val Gly Val Trp Gly Gln Asp Gly Asn Glu Glu Met Gly Gly Ile Thr
            20                  25                  30

Gln Thr Pro Tyr Lys Val Ser Ile Ser Gly Thr Thr Val Ile Leu Thr
        35                  40                  45

Cys Pro Gln Tyr Pro Gly Ser Glu Ile Leu Trp Gln His Asn Asp Lys
    50                  55                  60

Asn Ile Gly Gly Asp Glu Asp Asp Lys Asn Ile Gly Ser Asp Glu Asp
65                  70                  75                  80

His Leu Ser Leu Lys Glu Phe Ser Glu Leu Glu Gln Ser Gly Tyr Tyr
                85                  90                  95

Val Cys Tyr Pro Arg Gly Ser Lys Pro Glu Asp Ala Asn Phe Tyr Leu
            100                 105                 110

Tyr Leu Arg Ala Arg Val Cys Glu Asn Cys Met Glu Met Asp Val Met
        115                 120                 125

Ser Val Ala Thr Ile Val Ile Val Asp Ile Cys Ile Thr Gly Gly Leu
    130                 135                 140

Leu Leu Leu Val Tyr Tyr Trp Ser Lys Asn Arg Lys Ala Lys Ala Lys
145                 150                 155                 160

Pro Val Thr Arg Gly Ala Gly Ala Gly Gly Arg Gln Arg Gly Gln Asn
                165                 170                 175

Lys Glu Arg Pro Pro Pro Val Pro Asn Pro Asp Tyr Glu Pro Ile Arg
```

180 185 190

Lys Gly Gln Arg Asp Leu Tyr Ser Gly Leu Asn Gln Arg Arg Ile
195 200 205

<210> 170
<211> 171
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 170

Met Glu His Ser Thr Phe Leu Ser Gly Leu Val Leu Ala Thr Leu Leu
1 5 10 15

Ser Gln Val Ser Pro Phe Lys Ile Pro Ile Glu Glu Leu Glu Asp Arg
20 25 30

Val Phe Val Asn Cys Asn Thr Ser Ile Thr Trp Val Glu Gly Thr Val
35 40 45

Gly Thr Leu Leu Ser Asp Ile Thr Arg Leu Asp Leu Gly Lys Arg Ile
50 55 60

Leu Asp Pro Arg Gly Ile Tyr Arg Cys Asn Gly Thr Asp Ile Tyr Lys
65 70 75 80

Asp Lys Glu Ser Thr Val Gln Val His Tyr Arg Met Cys Gln Ser Cys
85 90 95

Val Glu Leu Asp Pro Ala Thr Val Ala Gly Ile Ile Val Thr Asp Val
100 105 110

Ile Ala Thr Leu Leu Leu Ala Leu Gly Val Phe Cys Phe Ala Gly His
115 120 125

```
Glu Thr Gly Arg Leu Ser Gly Ala Ala Asp Thr Gln Ala Leu Leu Arg
    130                 135                 140


Asn Asp Gln Val Tyr Gln Pro Leu Arg Asp Arg Asp Asp Ala Gln Tyr
145                 150                 155                 160


Ser His Leu Gly Gly Asn Trp Ala Arg Asn Lys
                165                 170


<210>  171
<211>  750
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  synthetic

<400>  171

Met Trp Asn Leu Leu His Glu Thr Asp Ser Ala Val Ala Thr Ala Arg
1               5                   10                  15


Arg Pro Arg Trp Leu Cys Ala Gly Ala Leu Val Leu Ala Gly Gly Phe
            20                  25                  30


Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser Ser Asn Glu
        35                  40                  45


Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala Phe Leu Asp Glu
    50                  55                  60


Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu Tyr Asn Phe Thr Gln Ile
65                  70                  75                  80


Pro His Leu Ala Gly Thr Glu Gln Asn Phe Gln Leu Ala Lys Gln Ile
                85                  90                  95


Gln Ser Gln Trp Lys Glu Phe Gly Leu Asp Ser Val Glu Leu Ala His
```

```
            100                 105                 110

Tyr Asp Val Leu Leu Ser Tyr Pro Asn Lys Thr His Pro Asn Tyr Ile
        115                 120                 125

Ser Ile Ile Asn Glu Asp Gly Asn Glu Ile Phe Asn Thr Ser Leu Phe
    130                 135                 140

Glu Pro Pro Pro Pro Gly Tyr Glu Asn Val Ser Asp Ile Val Pro Pro
145                 150                 155                 160

Phe Ser Ala Phe Ser Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr
                165                 170                 175

Val Asn Tyr Ala Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met
            180                 185                 190

Lys Ile Asn Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val
        195                 200                 205

Phe Arg Gly Asn Lys Val Lys Asn Ala Gln Leu Ala Gly Ala Lys Gly
    210                 215                 220

Val Ile Leu Tyr Ser Asp Pro Ala Asp Tyr Phe Ala Pro Gly Val Lys
225                 230                 235                 240

Ser Tyr Pro Asp Gly Trp Asn Leu Pro Gly Gly Gly Val Gln Arg Gly
                245                 250                 255

Asn Ile Leu Asn Leu Asn Gly Ala Gly Asp Pro Leu Thr Pro Gly Tyr
            260                 265                 270

Pro Ala Asn Glu Tyr Ala Tyr Arg Arg Gly Ile Ala Glu Ala Val Gly
        275                 280                 285

Leu Pro Ser Ile Pro Val His Pro Ile Gly Tyr Tyr Asp Ala Gln Lys
```

```
    290                 295                 300

Leu Leu Glu Lys Met Gly Gly Ser Ala Pro Pro Asp Ser Ser Trp Arg
305                 310                 315                 320

Gly Ser Leu Lys Val Pro Tyr Asn Val Gly Pro Gly Phe Thr Gly Asn
                325                 330                 335

Phe Ser Thr Gln Lys Val Lys Met His Ile His Ser Thr Asn Glu Val
            340                 345                 350

Thr Arg Ile Tyr Asn Val Ile Gly Thr Leu Arg Gly Ala Val Glu Pro
        355                 360                 365

Asp Arg Tyr Val Ile Leu Gly Gly His Arg Asp Ser Trp Val Phe Gly
    370                 375                 380

Gly Ile Asp Pro Gln Ser Gly Ala Ala Val Val His Glu Ile Val Arg
385                 390                 395                 400

Ser Phe Gly Thr Leu Lys Lys Glu Gly Trp Arg Pro Arg Arg Thr Ile
                405                 410                 415

Leu Phe Ala Ser Trp Asp Ala Glu Glu Phe Gly Leu Leu Gly Ser Thr
            420                 425                 430

Glu Trp Ala Glu Glu Asn Ser Arg Leu Leu Gln Glu Arg Gly Val Ala
        435                 440                 445

Tyr Ile Asn Ala Asp Ser Ser Ile Glu Gly Asn Tyr Thr Leu Arg Val
    450                 455                 460

Asp Cys Thr Pro Leu Met Tyr Ser Leu Val His Asn Leu Thr Lys Glu
465                 470                 475                 480

Leu Lys Ser Pro Asp Glu Gly Phe Glu Gly Lys Ser Leu Tyr Glu Ser
```

485 490 495

Trp Thr Lys Lys Ser Pro Ser Pro Glu Phe Ser Gly Met Pro Arg Ile
500 505 510

Ser Lys Leu Gly Ser Gly Asn Asp Phe Glu Val Phe Phe Gln Arg Leu
515 520 525

Gly Ile Ala Ser Gly Arg Ala Arg Tyr Thr Lys Asn Trp Glu Thr Asn
530 535 540

Lys Phe Ser Gly Tyr Pro Leu Tyr His Ser Val Tyr Glu Thr Tyr Glu
545 550 555 560

Leu Val Glu Lys Phe Tyr Asp Pro Met Phe Lys Tyr His Leu Thr Val
565 570 575

Ala Gln Val Arg Gly Gly Met Val Phe Glu Leu Ala Asn Ser Ile Val
580 585 590

Leu Pro Phe Asp Cys Arg Asp Tyr Ala Val Val Leu Arg Lys Tyr Ala
595 600 605

Asp Lys Ile Tyr Ser Ile Ser Met Lys His Pro Gln Glu Met Lys Thr
610 615 620

Tyr Ser Val Ser Phe Asp Ser Leu Phe Ser Ala Val Lys Asn Phe Thr
625 630 635 640

Glu Ile Ala Ser Lys Phe Ser Glu Arg Leu Gln Asp Phe Asp Lys Ser
645 650 655

Asn Pro Ile Val Leu Arg Met Met Asn Asp Gln Leu Met Phe Leu Glu
660 665 670

Arg Ala Phe Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro Phe Tyr Arg

675 680 685

His Val Ile Tyr Ala Pro Ser Ser His Asn Lys Tyr Ala Gly Glu Ser
690 695 700

Phe Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile Glu Ser Lys Val Asp
705 710 715 720

Pro Ser Lys Ala Trp Gly Glu Val Lys Arg Gln Ile Tyr Val Ala Ala
725 730 735

Phe Thr Val Gln Ala Ala Ala Glu Thr Leu Ser Glu Val Ala
740 745 750

<210> 172
<211> 943
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 172

Met Arg Pro Ser Gly Thr Ala Gly Ala Ala Leu Leu Ala Leu Leu Ala
1 5 10 15

Ala Leu Cys Pro Ala Ser Arg Ala Leu Glu Glu Lys Lys Gly Asn Tyr
20 25 30

Val Val Thr Asp His Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser
35 40 45

Tyr Glu Met Glu Glu Asp Gly Val Arg Lys Cys Lys Lys Cys Glu Gly
50 55 60

Pro Cys Arg Lys Val Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp
65 70 75 80

```
Ser Leu Ser Ile Asn Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr
                85                  90                  95

Ser Ile Ser Gly Asp Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp
            100                 105                 110

Ser Phe Thr His Thr Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu
        115                 120                 125

Lys Thr Val Lys Glu Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro
    130                 135                 140

Glu Asn Arg Thr Asp Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg
145                 150                 155                 160

Gly Arg Thr Lys Gln His Gly Gln Phe Ser Leu Ala Val Val Ser Leu
                165                 170                 175

Asn Ile Thr Ser Leu Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly
            180                 185                 190

Asp Val Ile Ile Ser Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile
        195                 200                 205

Asn Trp Lys Lys Leu Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile
    210                 215                 220

Ser Asn Arg Gly Glu Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His
225                 230                 235                 240

Ala Leu Cys Ser Pro Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys
                245                 250                 255

Val Ser Cys Arg Asn Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys
            260                 265                 270
```

```
Asn Leu Leu Glu Gly Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys
        275                 280                 285

Ile Gln Cys His Pro Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys
    290                 295                 300

Thr Gly Arg Gly Pro Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp
305                 310                 315                 320

Gly Pro His Cys Val Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn
                325                 330                 335

Asn Thr Leu Val Trp Lys Tyr Ala Asp Ala Gly His Val Cys His Leu
            340                 345                 350

Cys His Pro Asn Cys Thr Tyr Gly Cys Thr Gly Pro Gly Leu Glu Gly
        355                 360                 365

Cys Pro Thr Asn Gly Pro Lys Ile Pro Ser Ile Ala Thr Gly Met Val
    370                 375                 380

Gly Ala Leu Leu Leu Leu Leu Val Val Ala Leu Gly Ile Gly Leu Phe
385                 390                 395                 400

Met Arg Arg Arg His Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu
                405                 410                 415

Gln Glu Arg Glu Leu Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro
            420                 425                 430

Asn Gln Ala Leu Leu Arg Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile
        435                 440                 445

Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp
    450                 455                 460
```

```
Ile Pro Glu Gly Glu Lys Val Lys Ile Pro Val Ala Ile Lys Glu Leu
465                 470                 475                 480


Arg Glu Ala Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala
                485                 490                 495


Tyr Val Met Ala Ser Val Asp Asn Pro His Val Cys Arg Leu Leu Gly
            500                 505                 510


Ile Cys Leu Thr Ser Thr Val Gln Leu Ile Thr Gln Leu Met Pro Phe
        515                 520                 525


Gly Cys Leu Leu Asp Tyr Val Arg Glu His Lys Asp Asn Ile Gly Ser
    530                 535                 540


Gln Tyr Leu Leu Asn Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr
545                 550                 555                 560


Leu Glu Asp Arg Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn Val
                565                 570                 575


Leu Val Lys Thr Pro Gln His Val Lys Ile Thr Asp Phe Gly Leu Ala
            580                 585                 590


Lys Leu Leu Gly Ala Glu Glu Lys Glu Tyr His Ala Glu Gly Gly Lys
        595                 600                 605


Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu His Arg Ile Tyr
    610                 615                 620


Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr Val Trp Glu Leu
625                 630                 635                 640


Met Thr Phe Gly Ser Lys Pro Tyr Asp Gly Ile Pro Ala Ser Glu Ile
                645                 650                 655
```

```
Ser Ser Ile Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys
            660                 665                 670

Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp Met Ile Asp Ala
        675                 680                 685

Asp Ser Arg Pro Lys Phe Arg Glu Leu Ile Ile Glu Phe Ser Lys Met
    690                 695                 700

Ala Arg Asp Pro Gln Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met
705                 710                 715                 720

His Leu Pro Ser Pro Thr Asp Ser Asn Phe Tyr Arg Ala Leu Met Asp
                725                 730                 735

Glu Glu Asp Met Asp Asp Val Val Asp Ala Asp Glu Tyr Leu Ile Pro
            740                 745                 750

Gln Gln Gly Phe Phe Ser Ser Pro Ser Thr Ser Arg Thr Pro Leu Leu
        755                 760                 765

Ser Ser Leu Ser Ala Thr Ser Asn Asn Ser Thr Val Ala Cys Ile Asp
    770                 775                 780

Arg Asn Gly Leu Gln Ser Cys Pro Ile Lys Glu Asp Ser Phe Leu Gln
785                 790                 795                 800

Arg Tyr Ser Ser Asp Pro Thr Gly Ala Leu Thr Glu Asp Ser Ile Asp
                805                 810                 815

Asp Thr Phe Leu Pro Val Pro Glu Tyr Ile Asn Gln Ser Val Pro Lys
            820                 825                 830

Arg Pro Ala Gly Ser Val Gln Asn Pro Val Tyr His Asn Gln Pro Leu
        835                 840                 845
```

```
Asn Pro Ala Pro Ser Arg Asp Pro His Tyr Gln Asp Pro His Ser Thr
    850                 855                 860

Ala Val Gly Asn Pro Glu Tyr Leu Asn Thr Val Gln Pro Thr Cys Val
865                 870                 875                 880

Asn Ser Thr Phe Asp Ser Pro Ala His Trp Ala Gln Lys Gly Ser His
                885                 890                 895

Gln Ile Ser Leu Asp Asn Pro Asp Tyr Gln Gln Asp Phe Phe Pro Lys
            900                 905                 910

Glu Ala Lys Pro Asn Gly Ile Phe Lys Gly Ser Thr Ala Glu Asn Ala
        915                 920                 925

Glu Tyr Leu Arg Val Ala Pro Gln Ser Ser Glu Phe Ile Gly Ala
    930                 935                 940
```

<210> 173
<211> 14507
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 173

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Met Leu Lys Pro Ser Gly Leu Pro Gly Ser Ser Ser Pro Thr Arg Ser
1               5                   10                  15

Leu Met Thr Gly Ser Arg Ser Thr Lys Ala Thr Pro Glu Met Asp Ser
            20                  25                  30

Gly Leu Thr Gly Ala Thr Leu Ser Pro Lys Thr Ser Thr Gly Ala Ile
        35                  40                  45

Val Val Thr Glu His Thr Leu Pro Phe Thr Ser Pro Asp Lys Thr Leu
```

50 55 60

Ala Ser Pro Thr Ser Ser Val Val Gly Arg Thr Thr Gln Ser Leu Gly
65 70 75 80

Val Met Ser Ser Ala Leu Pro Glu Ser Thr Ser Arg Gly Met Thr His
85 90 95

Ser Glu Gln Arg Thr Ser Pro Ser Leu Ser Pro Gln Val Asn Gly Thr
100 105 110

Pro Ser Arg Asn Tyr Pro Ala Thr Ser Met Val Ser Gly Leu Ser Ser
115 120 125

Pro Arg Thr Arg Thr Ser Ser Thr Glu Gly Asn Phe Thr Lys Glu Ala
130 135 140

Ser Thr Tyr Thr Leu Thr Val Glu Thr Thr Ser Gly Pro Val Thr Glu
145 150 155 160

Lys Tyr Thr Val Pro Thr Glu Thr Ser Thr Thr Glu Gly Asp Ser Thr
165 170 175

Glu Thr Pro Trp Asp Thr Arg Tyr Ile Pro Val Lys Ile Thr Ser Pro
180 185 190

Met Lys Thr Phe Ala Asp Ser Thr Ala Ser Lys Glu Asn Ala Pro Val
195 200 205

Ser Met Thr Pro Ala Glu Thr Thr Val Thr Asp Ser His Thr Pro Gly
210 215 220

Arg Thr Asn Pro Ser Phe Gly Thr Leu Tyr Ser Ser Phe Leu Asp Leu
225 230 235 240

Ser Pro Lys Gly Thr Pro Asn Ser Arg Gly Glu Thr Ser Leu Glu Leu

245 250 255

Ile Leu Ser Thr Thr Gly Tyr Pro Phe Ser Ser Pro Glu Pro Gly Ser
260 265 270

Ala Gly His Ser Arg Ile Ser Thr Ser Ala Pro Leu Ser Ser Ser Ala
275 280 285

Ser Val Leu Asp Asn Lys Ile Ser Glu Thr Ser Ile Phe Ser Gly Gln
290 295 300

Ser Leu Thr Ser Pro Leu Ser Pro Gly Val Pro Glu Ala Arg Ala Ser
305 310 315 320

Thr Met Pro Asn Ser Ala Ile Pro Phe Ser Met Thr Leu Ser Asn Ala
325 330 335

Glu Thr Ser Ala Glu Arg Val Arg Ser Thr Ile Ser Ser Leu Gly Thr
340 345 350

Pro Ser Ile Ser Thr Lys Gln Thr Ala Glu Thr Ile Leu Thr Phe His
355 360 365

Ala Phe Ala Glu Thr Met Asp Ile Pro Ser Thr His Ile Ala Lys Thr
370 375 380

Leu Ala Ser Glu Trp Leu Gly Ser Pro Gly Thr Leu Gly Gly Thr Ser
385 390 395 400

Thr Ser Ala Leu Thr Thr Thr Ser Pro Ser Thr Thr Leu Val Ser Glu
405 410 415

Glu Thr Asn Thr His His Ser Thr Ser Gly Lys Glu Thr Glu Gly Thr
420 425 430

Leu Asn Thr Ser Met Thr Pro Leu Glu Thr Ser Ala Pro Gly Glu Glu

435 440 445

Ser Glu Met Thr Ala Thr Leu Val Pro Thr Leu Gly Phe Thr Thr Leu
450 455 460

Asp Ser Lys Ile Arg Ser Pro Ser Gln Val Ser Ser Ser His Pro Thr
465 470 475 480

Arg Glu Leu Arg Thr Thr Gly Ser Thr Ser Gly Arg Gln Ser Ser Ser
485 490 495

Thr Ala Ala His Gly Ser Ser Asp Ile Leu Arg Ala Thr Thr Ser Ser
500 505 510

Thr Ser Lys Ala Ser Ser Trp Thr Ser Glu Ser Thr Ala Gln Gln Phe
515 520 525

Ser Glu Pro Gln His Thr Gln Trp Val Glu Thr Ser Pro Ser Met Lys
530 535 540

Thr Glu Arg Pro Pro Ala Ser Thr Ser Val Ala Ala Pro Ile Thr Thr
545 550 555 560

Ser Val Pro Ser Val Val Ser Gly Phe Thr Thr Leu Lys Thr Ser Ser
565 570 575

Thr Lys Gly Ile Trp Leu Glu Glu Thr Ser Ala Asp Thr Leu Ile Gly
580 585 590

Glu Ser Thr Ala Gly Pro Thr Thr His Gln Phe Ala Val Pro Thr Gly
595 600 605

Ile Ser Met Thr Gly Gly Ser Ser Thr Arg Gly Ser Gln Gly Thr Thr
610 615 620

His Leu Leu Thr Arg Ala Thr Ala Ser Ser Glu Thr Ser Ala Asp Leu

625 630 635 640

Thr Leu Ala Thr Asn Gly Val Pro Val Ser Val Ser Pro Ala Val Ser
645 650 655

Lys Thr Ala Ala Gly Ser Ser Pro Pro Gly Gly Thr Lys Pro Ser Tyr
660 665 670

Thr Met Val Ser Ser Val Ile Pro Glu Thr Ser Ser Leu Gln Ser Ser
675 680 685

Ala Phe Arg Glu Gly Thr Ser Leu Gly Leu Thr Pro Leu Asn Thr Arg
690 695 700

His Pro Phe Ser Ser Pro Glu Pro Asp Ser Ala Gly His Thr Lys Ile
705 710 715 720

Ser Thr Ser Ile Pro Leu Leu Ser Ser Ala Ser Val Leu Glu Asp Lys
725 730 735

Val Ser Ala Thr Ser Thr Phe Ser His His Lys Ala Thr Ser Ser Ile
740 745 750

Thr Thr Gly Thr Pro Glu Ile Ser Thr Lys Thr Lys Pro Ser Ser Ala
755 760 765

Val Leu Ser Ser Met Thr Leu Ser Asn Ala Ala Thr Ser Pro Glu Arg
770 775 780

Val Arg Asn Ala Thr Ser Pro Leu Thr His Pro Ser Pro Ser Gly Glu
785 790 795 800

Glu Thr Ala Gly Ser Val Leu Thr Leu Ser Thr Ser Ala Glu Thr Thr
805 810 815

Asp Ser Pro Asn Ile His Pro Thr Gly Thr Leu Thr Ser Glu Ser Ser

820 825 830

Glu Ser Pro Ser Thr Leu Ser Leu Pro Ser Val Ser Gly Val Lys Thr
835 840 845

Thr Phe Ser Ser Ser Thr Pro Ser Thr His Leu Phe Thr Ser Gly Glu
850 855 860

Glu Thr Glu Glu Thr Ser Asn Pro Ser Val Ser Gln Pro Glu Thr Ser
865 870 875 880

Val Ser Arg Val Arg Thr Thr Leu Ala Ser Thr Ser Val Pro Thr Pro
885 890 895

Val Phe Pro Thr Met Asp Thr Trp Pro Thr Arg Ser Ala Gln Phe Ser
900 905 910

Ser Ser His Leu Val Ser Glu Leu Arg Ala Thr Ser Ser Thr Ser Val
915 920 925

Thr Asn Ser Thr Gly Ser Ala Leu Pro Lys Ile Ser His Leu Thr Gly
930 935 940

Thr Ala Thr Met Ser Gln Thr Asn Arg Asp Thr Phe Asn Asp Ser Ala
945 950 955 960

Ala Pro Gln Ser Thr Thr Trp Pro Glu Thr Ser Pro Arg Phe Lys Thr
965 970 975

Gly Leu Pro Ser Ala Thr Thr Thr Val Ser Thr Ser Ala Thr Ser Leu
980 985 990

Ser Ala Thr Val Met Val Ser Lys Phe Thr Ser Pro Ala Thr Ser Ser
995 1000 1005

Met Glu Ala Thr Ser Ile Arg Glu Pro Ser Thr Thr Ile Leu Thr

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    1010                1015                1020

Thr Glu  Thr Thr Asn Gly Pro  Gly Ser Met Ala Val  Ala Ser Thr
    1025                1030                1035

Asn Ile  Pro Ile Gly Lys Gly  Tyr Ile Thr Glu Gly  Arg Leu Asp
    1040                1045                1050

Thr Ser  His Leu Pro Ile Gly  Thr Thr Ala Ser Ser  Glu Thr Ser
    1055                1060                1065

Met Asp  Phe Thr Met Ala Lys  Glu Ser Val Ser Met  Ser Val Ser
    1070                1075                1080

Pro Ser  Gln Ser Met Asp Ala  Ala Gly Ser Ser Thr  Pro Gly Arg
    1085                1090                1095

Thr Ser  Gln Phe Val Asp Thr  Phe Ser Asp Asp Val  Tyr His Leu
    1100                1105                1110

Thr Ser  Arg Glu Ile Thr Ile  Pro Arg Asp Gly Thr  Ser Ser Ala
    1115                1120                1125

Leu Thr  Pro Gln Met Thr Ala  Thr His Pro Pro Ser  Pro Asp Pro
    1130                1135                1140

Gly Ser  Ala Arg Ser Thr Trp  Leu Gly Ile Leu Ser  Ser Ser Pro
    1145                1150                1155

Ser Ser  Pro Thr Pro Lys Val  Thr Met Ser Ser Thr  Phe Ser Thr
    1160                1165                1170

Gln Arg  Val Thr Thr Ser Met  Ile Met Asp Thr Val  Glu Thr Ser
    1175                1180                1185

Arg Trp  Asn Met Pro Asn Leu  Pro Ser Thr Thr Ser  Leu Thr Pro
```

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    1190                1195                1200

Ser Asn  Ile Pro Thr Ser Gly  Ala Ile Gly Lys Ser  Thr Leu Val
    1205                1210                1215

Pro Leu  Asp Thr Pro Ser Pro  Ala Thr Ser Leu Glu  Ala Ser Glu
    1220                1225                1230

Gly Gly  Leu Pro Thr Leu Ser  Thr Tyr Pro Glu Ser  Thr Asn Thr
    1235                1240                1245

Pro Ser  Ile His Leu Gly Ala  His Ala Ser Ser Glu  Ser Pro Ser
    1250                1255                1260

Thr Ile  Lys Leu Thr Met Ala  Ser Val Val Lys Pro  Gly Ser Tyr
    1265                1270                1275

Thr Pro  Leu Thr Phe Pro Ser  Ile Glu Thr His Ile  His Val Ser
    1280                1285                1290

Thr Ala  Arg Met Ala Tyr Ser  Ser Gly Ser Ser Pro  Glu Met Thr
    1295                1300                1305

Ala Pro  Gly Glu Thr Asn Thr  Gly Ser Thr Trp Asp  Pro Thr Thr
    1310                1315                1320

Tyr Ile  Thr Thr Thr Asp Pro  Lys Asp Thr Ser Ser  Ala Gln Val
    1325                1330                1335

Ser Thr  Pro His Ser Val Arg  Thr Leu Arg Thr Thr  Glu Asn His
    1340                1345                1350

Pro Lys  Thr Glu Ser Ala Thr  Pro Ala Ala Tyr Ser  Gly Ser Pro
    1355                1360                1365

Lys Ile  Ser Ser Ser Pro Asn  Leu Thr Ser Pro Ala  Thr Lys Ala
```

```
    1370                1375                1380

Trp Thr  Ile Thr Asp Thr Thr  Glu His Ser Thr Gln  Leu His Tyr
    1385                1390                1395

Thr Lys  Leu Ala Glu Lys Ser  Ser Gly Phe Glu Thr  Gln Ser Ala
    1400                1405                1410

Pro Gly  Pro Val Ser Val Val  Ile Pro Thr Ser Pro  Thr Ile Gly
    1415                1420                1425

Ser Ser  Thr Leu Glu Leu Thr  Ser Asp Val Pro Gly  Glu Pro Leu
    1430                1435                1440

Val Leu  Ala Pro Ser Glu Gln  Thr Thr Ile Thr Leu  Pro Met Ala
    1445                1450                1455

Thr Trp  Leu Ser Thr Ser Leu  Thr Glu Glu Met Ala  Ser Thr Asp
    1460                1465                1470

Leu Asp  Ile Ser Ser Pro Ser  Ser Pro Met Ser Thr  Phe Ala Ile
    1475                1480                1485

Phe Pro  Pro Met Ser Thr Pro  Ser His Glu Leu Ser  Lys Ser Glu
    1490                1495                1500

Ala Asp  Thr Ser Ala Ile Arg  Asn Thr Asp Ser Thr  Thr Leu Asp
    1505                1510                1515

Gln His  Leu Gly Ile Arg Ser  Leu Gly Arg Thr Gly  Asp Leu Thr
    1520                1525                1530

Thr Val  Pro Ile Thr Pro Leu  Thr Thr Thr Trp Thr  Ser Val Ile
    1535                1540                1545

Glu His  Ser Thr Gln Ala Gln  Asp Thr Leu Ser Ala  Thr Met Ser
```

```
    1550                1555                1560

Pro Thr  His Val Thr Gln Ser  Leu Lys Asp Gln Thr  Ser Ile Pro
    1565                1570                1575

Ala Ser  Ala Ser Pro Ser His  Leu Thr Glu Val Tyr  Pro Glu Leu
    1580                1585                1590

Gly Thr  Gln Gly Arg Ser Ser  Ser Glu Ala Thr Thr  Phe Trp Lys
    1595                1600                1605

Pro Ser  Thr Asp Thr Leu Ser  Arg Glu Ile Glu Thr  Gly Pro Thr
    1610                1615                1620

Asn Ile  Gln Ser Thr Pro Pro  Met Asp Asn Thr Thr  Thr Gly Ser
    1625                1630                1635

Ser Ser  Ser Gly Val Thr Leu  Gly Ile Ala His Leu  Pro Ile Gly
    1640                1645                1650

Thr Ser  Ser Pro Ala Glu Thr  Ser Thr Asn Met Ala  Leu Glu Arg
    1655                1660                1665

Arg Ser  Ser Thr Ala Thr Val  Ser Met Ala Gly Thr  Met Gly Leu
    1670                1675                1680

Leu Val  Thr Ser Ala Pro Gly  Arg Ser Ile Ser Gln  Ser Leu Gly
    1685                1690                1695

Arg Val  Ser Ser Val Leu Ser  Glu Ser Thr Thr Glu  Gly Val Thr
    1700                1705                1710

Asp Ser  Ser Lys Gly Ser Ser  Pro Arg Leu Asn Thr  Gln Gly Asn
    1715                1720                1725

Thr Ala  Leu Ser Ser Ser Leu  Glu Pro Ser Tyr Ala  Glu Gly Ser
```

```
    1730                1735                1740

Gln Met  Ser Thr Ser Ile Pro  Leu Thr Ser Ser Pro  Thr Thr Pro
    1745                1750                1755

Asp Val  Glu Phe Ile Gly Gly  Ser Thr Phe Trp Thr  Lys Glu Val
    1760                1765                1770

Thr Thr  Val Met Thr Ser Asp  Ile Ser Lys Ser Ser  Ala Arg Thr
    1775                1780                1785

Glu Ser  Ser Ser Ala Thr Leu  Met Ser Thr Ala Leu  Gly Ser Thr
    1790                1795                1800

Glu Asn  Thr Gly Lys Glu Lys  Leu Arg Thr Ala Ser  Met Asp Leu
    1805                1810                1815

Pro Ser  Pro Thr Pro Ser Met  Glu Val Thr Pro Trp  Ile Ser Leu
    1820                1825                1830

Thr Leu  Ser Asn Ala Pro Asn  Thr Thr Asp Ser Leu  Asp Leu Ser
    1835                1840                1845

His Gly  Val His Thr Ser Ser  Ala Gly Thr Leu Ala  Thr Asp Arg
    1850                1855                1860

Ser Leu  Asn Thr Gly Val Thr  Arg Ala Ser Arg Leu  Glu Asn Gly
    1865                1870                1875

Ser Asp  Thr Ser Ser Lys Ser  Leu Ser Met Gly Asn  Ser Thr His
    1880                1885                1890

Thr Ser  Met Thr Tyr Thr Glu  Lys Ser Glu Val Ser  Ser Ser Ile
    1895                1900                1905

His Pro  Arg Pro Glu Thr Ser  Ala Pro Gly Ala Glu  Thr Thr Leu
```

1910 1915 1920

Thr Ser Thr Pro Gly Asn Arg Ala Ile Ser Leu Thr Leu Pro Phe
1925 1930 1935

Ser Ser Ile Pro Val Glu Glu Val Ile Ser Thr Gly Ile Thr Ser
1940 1945 1950

Gly Pro Asp Ile Asn Ser Ala Pro Met Thr His Ser Pro Ile Thr
1955 1960 1965

Pro Pro Thr Ile Val Trp Thr Ser Thr Gly Thr Ile Glu Gln Ser
1970 1975 1980

Thr Gln Pro Leu His Ala Val Ser Ser Glu Lys Val Ser Val Gln
1985 1990 1995

Thr Gln Ser Thr Pro Tyr Val Asn Ser Val Ala Val Ser Ala Ser
2000 2005 2010

Pro Thr His Glu Asn Ser Val Ser Ser Gly Ser Ser Thr Ser Ser
2015 2020 2025

Pro Tyr Ser Ser Ala Ser Leu Glu Ser Leu Asp Ser Thr Ile Ser
2030 2035 2040

Arg Arg Asn Ala Ile Thr Ser Trp Leu Trp Asp Leu Thr Thr Ser
2045 2050 2055

Leu Pro Thr Thr Thr Trp Pro Ser Thr Ser Leu Ser Glu Ala Leu
2060 2065 2070

Ser Ser Gly His Ser Gly Val Ser Asn Pro Ser Ser Thr Thr Thr
2075 2080 2085

Glu Phe Pro Leu Phe Ser Ala Ala Ser Thr Ser Ala Ala Lys Gln

```
    2090                2095                2100

Arg Asn  Pro Glu Thr Glu Thr  His Gly Pro Gln Asn  Thr Ala Ala
    2105                2110                2115

Ser Thr  Leu Asn Thr Asp Ala  Ser Ser Val Thr Gly  Leu Ser Glu
    2120                2125                2130

Thr Pro  Val Gly Ala Ser Ile  Ser Ser Glu Val Pro  Leu Pro Met
    2135                2140                2145

Ala Ile  Thr Ser Arg Ser Asp  Val Ser Gly Leu Thr  Ser Glu Ser
    2150                2155                2160

Thr Ala  Asn Pro Ser Leu Gly  Thr Ala Ser Ser Ala  Gly Thr Lys
    2165                2170                2175

Leu Thr  Arg Thr Ile Ser Leu  Pro Thr Ser Glu Ser  Leu Val Ser
    2180                2185                2190

Phe Arg  Met Asn Lys Asp Pro  Trp Thr Val Ser Ile  Pro Leu Gly
    2195                2200                2205

Ser His  Pro Thr Thr Asn Thr  Glu Thr Ser Ile Pro  Val Asn Ser
    2210                2215                2220

Ala Gly  Pro Pro Gly Leu Ser  Thr Val Ala Ser Asp  Val Ile Asp
    2225                2230                2235

Thr Pro  Ser Asp Gly Ala Glu  Ser Ile Pro Thr Val  Ser Phe Ser
    2240                2245                2250

Pro Ser  Pro Asp Thr Glu Val  Thr Thr Ile Ser His  Phe Pro Glu
    2255                2260                2265

Lys Thr  Thr His Ser Phe Arg  Thr Ile Ser Ser Leu  Thr His Glu
```

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    2270                2275                2280

Leu Thr  Ser Arg Val Thr Pro  Ile Pro Gly Asp Trp  Met Ser Ser
    2285                2290                2295

Ala Met  Ser Thr Lys Pro Thr  Gly Ala Ser Pro Ser  Ile Thr Leu
    2300                2305                2310

Gly Glu  Arg Arg Thr Ile Thr  Ser Ala Ala Pro Thr  Thr Ser Pro
    2315                2320                2325

Ile Val  Leu Thr Ala Ser Phe  Thr Glu Thr Ser Thr  Val Ser Leu
    2330                2335                2340

Asp Asn  Glu Thr Thr Val Lys  Thr Ser Asp Ile Leu  Asp Ala Arg
    2345                2350                2355

Lys Thr  Asn Glu Leu Pro Ser  Asp Ser Ser Ser Ser  Ser Asp Leu
    2360                2365                2370

Ile Asn  Thr Ser Ile Ala Ser  Ser Thr Met Asp Val  Thr Lys Thr
    2375                2380                2385

Ala Ser  Ile Ser Pro Thr Ser  Ile Ser Gly Met Thr  Ala Ser Ser
    2390                2395                2400

Ser Pro  Ser Leu Phe Ser Ser  Asp Arg Pro Gln Val  Pro Thr Ser
    2405                2410                2415

Thr Thr  Glu Thr Asn Thr Ala  Thr Ser Pro Ser Val  Ser Ser Asn
    2420                2425                2430

Thr Tyr  Ser Leu Asp Gly Gly  Ser Asn Val Gly Gly  Thr Pro Ser
    2435                2440                2445

Thr Leu  Pro Pro Phe Thr Ile  Thr His Pro Val Glu  Thr Ser Ser
```

```
    2450                2455                2460

Ala Leu  Leu Ala Trp Ser Arg  Pro Val Arg Thr Phe  Ser Thr Met
    2465                2470                2475

Val Ser  Thr Asp Thr Ala Ser  Gly Glu Asn Pro Thr  Ser Ser Asn
    2480                2485                2490

Ser Val  Val Thr Ser Val Pro  Ala Pro Gly Thr Trp  Thr Ser Val
    2495                2500                2505

Gly Ser  Thr Thr Asp Leu Pro  Ala Met Gly Phe Leu  Lys Thr Ser
    2510                2515                2520

Pro Ala  Gly Glu Ala His Ser  Leu Leu Ala Ser Thr  Ile Glu Pro
    2525                2530                2535

Ala Thr  Ala Phe Thr Pro His  Leu Ser Ala Ala Val  Val Thr Gly
    2540                2545                2550

Ser Ser  Ala Thr Ser Glu Ala  Ser Leu Leu Thr Thr  Ser Glu Ser
    2555                2560                2565

Lys Ala  Ile His Ser Ser Pro  Gln Thr Pro Thr Thr  Pro Thr Ser
    2570                2575                2580

Gly Ala  Asn Trp Glu Thr Ser  Ala Thr Pro Glu Ser  Leu Leu Val
    2585                2590                2595

Val Thr  Glu Thr Ser Asp Thr  Thr Leu Thr Ser Lys  Ile Leu Val
    2600                2605                2610

Thr Asp  Thr Ile Leu Phe Ser  Thr Val Ser Thr Pro  Pro Ser Lys
    2615                2620                2625

Phe Pro  Ser Thr Gly Thr Leu  Ser Gly Ala Ser Phe  Pro Thr Leu
```

```
    2630                2635                2640

Leu Pro  Asp Thr Pro Ala Ile  Pro Leu Thr Ala Thr  Glu Pro Thr
    2645                2650                2655

Ser Ser  Leu Ala Thr Ser Phe  Asp Ser Thr Pro Leu  Val Thr Ile
    2660                2665                2670

Ala Ser  Asp Ser Leu Gly Thr  Val Pro Glu Thr Thr  Leu Thr Met
    2675                2680                2685

Ser Glu  Thr Ser Asn Gly Asp  Ala Leu Val Leu Lys  Thr Val Ser
    2690                2695                2700

Asn Pro  Asp Arg Ser Ile Pro  Gly Ile Thr Ile Gln  Gly Val Thr
    2705                2710                2715

Glu Ser  Pro Leu His Pro Ser  Ser Thr Ser Pro Ser  Lys Ile Val
    2720                2725                2730

Ala Pro  Arg Asn Thr Thr Tyr  Glu Gly Ser Ile Thr  Val Ala Leu
    2735                2740                2745

Ser Thr  Leu Pro Ala Gly Thr  Thr Gly Ser Leu Val  Phe Ser Gln
    2750                2755                2760

Ser Ser  Glu Asn Ser Glu Thr  Thr Ala Leu Val Asp  Ser Ser Ala
    2765                2770                2775

Gly Leu  Glu Arg Ala Ser Val  Met Pro Leu Thr Thr  Gly Ser Gln
    2780                2785                2790

Gly Met  Ala Ser Ser Gly Gly  Ile Arg Ser Gly Ser  Thr His Ser
    2795                2800                2805

Thr Gly  Thr Lys Thr Phe Ser  Ser Leu Pro Leu Thr  Met Asn Pro
```

```
    2810                2815                2820

Gly Glu  Val Thr Ala Met Ser  Glu Ile Thr Thr Asn  Arg Leu Thr
    2825                2830                2835

Ala Thr  Gln Ser Thr Ala Pro  Lys Gly Ile Pro Val  Lys Pro Thr
    2840                2845                2850

Ser Ala  Glu Ser Gly Leu Leu  Thr Pro Val Ser Ala  Ser Ser Ser
    2855                2860                2865

Pro Ser  Lys Ala Phe Ala Ser  Leu Thr Thr Ala Pro  Pro Thr Trp
    2870                2875                2880

Gly Ile  Pro Gln Ser Thr Leu  Thr Phe Glu Phe Ser  Glu Val Pro
    2885                2890                2895

Ser Leu  Asp Thr Lys Ser Ala  Ser Leu Pro Thr Pro  Gly Gln Ser
    2900                2905                2910

Leu Asn  Thr Ile Pro Asp Ser  Asp Ala Ser Thr Ala  Ser Ser Ser
    2915                2920                2925

Leu Ser  Lys Ser Pro Glu Lys  Asn Pro Arg Ala Arg  Met Met Thr
    2930                2935                2940

Ser Thr  Lys Ala Ile Ser Ala  Ser Ser Phe Gln Ser  Thr Gly Phe
    2945                2950                2955

Thr Glu  Thr Pro Glu Gly Ser  Ala Ser Pro Ser Met  Ala Gly His
    2960                2965                2970

Glu Pro  Arg Val Pro Thr Ser  Gly Thr Gly Asp Pro  Arg Tyr Ala
    2975                2980                2985

Ser Glu  Ser Met Ser Tyr Pro  Asp Pro Ser Lys Ala  Ser Ser Ala
```

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    2990                2995                3000

Met Thr  Ser Thr Ser Leu Ala  Ser Lys Leu Thr Thr  Leu Phe Ser
    3005                3010                3015

Thr Gly  Gln Ala Ala Arg Ser  Gly Ser Ser Ser Ser  Pro Ile Ser
    3020                3025                3030

Leu Ser  Thr Glu Lys Glu Thr  Ser Phe Leu Ser Pro  Thr Ala Ser
    3035                3040                3045

Thr Ser  Arg Lys Thr Ser Leu  Phe Leu Gly Pro Ser  Met Ala Arg
    3050                3055                3060

Gln Pro  Asn Ile Leu Val His  Leu Gln Thr Ser Ala  Leu Thr Leu
    3065                3070                3075

Ser Pro  Thr Ser Thr Leu Asn  Met Ser Gln Glu Glu  Pro Pro Glu
    3080                3085                3090

Leu Thr  Ser Ser Gln Thr Ile  Ala Glu Glu Glu Gly  Thr Thr Ala
    3095                3100                3105

Glu Thr  Gln Thr Leu Thr Phe  Thr Pro Ser Glu Thr  Pro Thr Ser
    3110                3115                3120

Leu Leu  Pro Val Ser Ser Pro  Thr Glu Pro Thr Ala  Arg Arg Lys
    3125                3130                3135

Ser Ser  Pro Glu Thr Trp Ala  Ser Ser Ile Ser Val  Pro Ala Lys
    3140                3145                3150

Thr Ser  Leu Val Glu Thr Thr  Asp Gly Thr Leu Val  Thr Thr Ile
    3155                3160                3165

Lys Met  Ser Ser Gln Ala Ala  Gln Gly Asn Ser Thr  Trp Pro Ala
```

```
    3170                3175                3180

Pro Ala  Glu Glu Thr Gly Ser  Ser Pro Ala Gly Thr  Ser Pro Gly
    3185                3190                3195

Ser Pro  Glu Met Ser Thr Thr  Leu Lys Ile Met Ser  Ser Lys Glu
    3200                3205                3210

Pro Ser  Ile Ser Pro Glu Ile  Arg Ser Thr Val Arg  Asn Ser Pro
    3215                3220                3225

Trp Lys  Thr Pro Glu Thr Thr  Val Pro Met Glu Thr  Thr Val Glu
    3230                3235                3240

Pro Val  Thr Leu Gln Ser Thr  Ala Leu Gly Ser Gly  Ser Thr Ser
    3245                3250                3255

Ile Ser  His Leu Pro Thr Gly  Thr Thr Ser Pro Thr  Lys Ser Pro
    3260                3265                3270

Thr Glu  Asn Met Leu Ala Thr  Glu Arg Val Ser Leu  Ser Pro Ser
    3275                3280                3285

Pro Pro  Glu Ala Trp Thr Asn  Leu Tyr Ser Gly Thr  Pro Gly Gly
    3290                3295                3300

Thr Arg  Gln Ser Leu Ala Thr  Met Ser Ser Val Ser  Leu Glu Ser
    3305                3310                3315

Pro Thr  Ala Arg Ser Ile Thr  Gly Thr Gly Gln Gln  Ser Ser Pro
    3320                3325                3330

Glu Leu  Val Ser Lys Thr Thr  Gly Met Glu Phe Ser  Met Trp His
    3335                3340                3345

Gly Ser  Thr Gly Gly Thr Thr  Gly Asp Thr His Val  Ser Leu Ser
```

```
    3350                3355                3360

Thr Ser  Ser Asn Ile Leu Glu  Asp Pro Val Thr Ser  Pro Asn Ser
    3365                3370                3375

Val Ser  Ser Leu Thr Asp Lys  Ser Lys His Lys Thr  Glu Thr Trp
    3380                3385                3390

Val Ser  Thr Thr Ala Ile Pro  Ser Thr Val Leu Asn  Asn Lys Ile
    3395                3400                3405

Met Ala  Ala Glu Gln Gln Thr  Ser Arg Ser Val Asp  Glu Ala Tyr
    3410                3415                3420

Ser Ser  Thr Ser Ser Trp Ser  Asp Gln Thr Ser Gly  Ser Asp Ile
    3425                3430                3435

Thr Leu  Gly Ala Ser Pro Asp  Val Thr Asn Thr Leu  Tyr Ile Thr
    3440                3445                3450

Ser Thr  Ala Gln Thr Thr Ser  Leu Val Ser Leu Pro  Ser Gly Asp
    3455                3460                3465

Gln Gly  Ile Thr Ser Leu Thr  Asn Pro Ser Gly Gly  Lys Thr Ser
    3470                3475                3480

Ser Ala  Ser Ser Val Thr Ser  Pro Ser Ile Gly Leu  Glu Thr Leu
    3485                3490                3495

Arg Ala  Asn Val Ser Ala Val  Lys Ser Asp Ile Ala  Pro Thr Ala
    3500                3505                3510

Gly His  Leu Ser Gln Thr Ser  Ser Pro Ala Glu Val  Ser Ile Leu
    3515                3520                3525

Asp Val  Thr Thr Ala Pro Thr  Pro Gly Ile Ser Thr  Thr Ile Thr
```

```
    3530                3535                3540

Thr Met  Gly Thr Asn Ser Ile  Ser Thr Thr Thr Pro  Asn Pro Glu
    3545                3550                3555

Val Gly  Met Ser Thr Met Asp  Ser Thr Pro Ala Thr  Glu Arg Arg
    3560                3565                3570

Thr Thr  Ser Thr Glu His Pro  Ser Thr Trp Ser Ser  Thr Ala Ala
    3575                3580                3585

Ser Asp  Ser Trp Thr Val Thr  Asp Met Thr Ser Asn  Leu Lys Val
    3590                3595                3600

Ala Arg  Ser Pro Gly Thr Ile  Ser Thr Met His Thr  Thr Ser Phe
    3605                3610                3615

Leu Ala  Ser Ser Thr Glu Leu  Asp Ser Met Ser Thr  Pro His Gly
    3620                3625                3630

Arg Ile  Thr Val Ile Gly Thr  Ser Leu Val Thr Pro  Ser Ser Asp
    3635                3640                3645

Ala Ser  Ala Val Lys Thr Glu  Thr Ser Thr Ser Glu  Arg Thr Leu
    3650                3655                3660

Ser Pro  Ser Asp Thr Thr Ala  Ser Thr Pro Ile Ser  Thr Phe Ser
    3665                3670                3675

Arg Val  Gln Arg Met Ser Ile  Ser Val Pro Asp Ile  Leu Ser Thr
    3680                3685                3690

Ser Trp  Thr Pro Ser Ser Thr  Glu Ala Glu Asp Val  Pro Val Ser
    3695                3700                3705

Met Val  Ser Thr Asp His Ala  Ser Thr Lys Thr Asp  Pro Asn Thr
```

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    3710                3715                3720

Pro Leu  Ser Thr Phe Leu Phe  Asp Ser Leu Ser Thr  Leu Asp Trp
    3725                3730                3735

Asp Thr  Gly Arg Ser Leu Ser  Ser Ala Thr Ala Thr  Thr Ser Ala
    3740                3745                3750

Pro Gln  Gly Ala Thr Thr Pro  Gln Glu Leu Thr Leu  Glu Thr Met
    3755                3760                3765

Ile Ser  Pro Ala Thr Ser Gln  Leu Pro Phe Ser Ile  Gly His Ile
    3770                3775                3780

Thr Ser  Ala Val Thr Pro Ala  Ala Met Ala Arg Ser  Ser Gly Val
    3785                3790                3795

Thr Phe  Ser Arg Pro Asp Pro  Thr Ser Lys Lys Ala  Glu Gln Thr
    3800                3805                3810

Ser Thr  Gln Leu Pro Thr Thr  Thr Ser Ala His Pro  Gly Gln Val
    3815                3820                3825

Pro Arg  Ser Ala Ala Thr Thr  Leu Asp Val Ile Pro  His Thr Ala
    3830                3835                3840

Lys Thr  Pro Asp Ala Thr Phe  Gln Arg Gln Gly Gln  Thr Ala Leu
    3845                3850                3855

Thr Thr  Glu Ala Arg Ala Thr  Ser Asp Ser Trp Asn  Glu Lys Glu
    3860                3865                3870

Lys Ser  Thr Pro Ser Ala Pro  Trp Ile Thr Glu Met  Met Asn Ser
    3875                3880                3885

Val Ser  Glu Asp Thr Ile Lys  Glu Val Thr Ser Ser  Ser Ser Val
```

```
    3890                3895                3900

Leu Arg  Thr Leu Asn Thr Leu  Asp Ile Asn Leu Glu  Ser Gly Thr
    3905                3910                3915

Thr Ser  Ser Pro Ser Trp Lys  Ser Ser Pro Tyr Glu  Arg Ile Ala
    3920                3925                3930

Pro Ser  Glu Ser Thr Thr Asp  Lys Glu Ala Ile His  Pro Ser Thr
    3935                3940                3945

Asn Thr  Val Glu Thr Thr Gly  Trp Val Thr Ser Ser  Glu His Ala
    3950                3955                3960

Ser His  Ser Thr Ile Pro Ala  His Ser Ala Ser Ser  Lys Leu Thr
    3965                3970                3975

Ser Pro  Val Val Thr Thr Ser  Thr Arg Glu Gln Ala  Ile Val Ser
    3980                3985                3990

Met Ser  Thr Thr Thr Trp Pro  Glu Ser Thr Arg Ala  Arg Thr Glu
    3995                4000                4005

Pro Asn  Ser Phe Leu Thr Ile  Glu Leu Arg Asp Val  Ser Pro Tyr
    4010                4015                4020

Met Asp  Thr Ser Ser Thr Thr  Gln Thr Ser Ile Ile  Ser Ser Pro
    4025                4030                4035

Gly Ser  Thr Ala Ile Thr Lys  Gly Pro Arg Thr Glu  Ile Thr Ser
    4040                4045                4050

Ser Lys  Arg Ile Ser Ser Ser  Phe Leu Ala Gln Ser  Met Arg Ser
    4055                4060                4065

Ser Asp  Ser Pro Ser Glu Ala  Ile Thr Arg Leu Ser  Asn Phe Pro
```

```
    4070                4075                4080

Ala Met  Thr Glu Ser Gly Gly  Met Ile Leu Ala Met  Gln Thr Ser
    4085                4090                4095

Pro Pro  Gly Ala Thr Ser Leu  Ser Ala Pro Thr Leu  Asp Thr Ser
    4100                4105                4110

Ala Thr  Ala Ser Trp Thr Gly  Thr Pro Leu Ala Thr  Thr Gln Arg
    4115                4120                4125

Phe Thr  Tyr Ser Glu Lys Thr  Thr Leu Phe Ser Lys  Gly Pro Glu
    4130                4135                4140

Asp Thr  Ser Gln Pro Ser Pro  Pro Ser Val Glu Glu  Thr Ser Ser
    4145                4150                4155

Ser Ser  Ser Leu Val Pro Ile  His Ala Thr Thr Ser  Pro Ser Asn
    4160                4165                4170

Ile Leu  Leu Thr Ser Gln Gly  His Ser Pro Ser Ser  Thr Pro Pro
    4175                4180                4185

Val Thr  Ser Val Phe Leu Ser  Glu Thr Ser Gly Leu  Gly Lys Thr
    4190                4195                4200

Thr Asp  Met Ser Arg Ile Ser  Leu Glu Pro Gly Thr  Ser Leu Pro
    4205                4210                4215

Pro Asn  Leu Ser Ser Thr Ala  Gly Glu Ala Leu Ser  Thr Tyr Glu
    4220                4225                4230

Ala Ser  Arg Asp Thr Lys Ala  Ile His His Ser Ala  Asp Thr Ala
    4235                4240                4245

Val Thr  Asn Met Glu Ala Thr  Ser Ser Glu Tyr Ser  Pro Ile Pro
```

4250 4255 4260

Gly His Thr Lys Pro Ser Lys Ala Thr Ser Pro Leu Val Thr Ser
4265 4270 4275

His Ile Met Gly Asp Ile Thr Ser Ser Thr Ser Val Phe Gly Ser
4280 4285 4290

Ser Glu Thr Thr Glu Ile Glu Thr Val Ser Ser Val Asn Gln Gly
4295 4300 4305

Leu Gln Glu Arg Ser Thr Ser Gln Val Ala Ser Ser Ala Thr Glu
4310 4315 4320

Thr Ser Thr Val Ile Thr His Val Ser Ser Gly Asp Ala Thr Thr
4325 4330 4335

His Val Thr Lys Thr Gln Ala Thr Phe Ser Ser Gly Thr Ser Ile
4340 4345 4350

Ser Ser Pro His Gln Phe Ile Thr Ser Thr Asn Thr Phe Thr Asp
4355 4360 4365

Val Ser Thr Asn Pro Ser Thr Ser Leu Ile Met Thr Glu Ser Ser
4370 4375 4380

Gly Val Thr Ile Thr Thr Gln Thr Gly Pro Thr Gly Ala Ala Thr
4385 4390 4395

Gln Gly Pro Tyr Leu Leu Asp Thr Ser Thr Met Pro Tyr Leu Thr
4400 4405 4410

Glu Thr Pro Leu Ala Val Thr Pro Asp Phe Met Gln Ser Glu Lys
4415 4420 4425

Thr Thr Leu Ile Ser Lys Gly Pro Lys Asp Val Ser Trp Thr Ser

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    4430                4435                4440

Pro Pro  Ser Val Ala Glu Thr  Ser Tyr Pro Ser Ser  Leu Thr Pro
    4445                4450                4455

Phe Leu  Val Thr Thr Ile Pro  Pro Ala Thr Ser Thr  Leu Gln Gly
    4460                4465                4470

Gln His  Thr Ser Ser Pro Val  Ser Ala Thr Ser Val  Leu Thr Ser
    4475                4480                4485

Gly Leu  Val Lys Thr Thr Asp  Met Leu Asn Thr Ser  Met Glu Pro
    4490                4495                4500

Val Thr  Asn Ser Pro Gln Asn  Leu Asn Asn Pro Ser  Asn Glu Ile
    4505                4510                4515

Leu Ala  Thr Leu Ala Ala Thr  Thr Asp Ile Glu Thr  Ile His Pro
    4520                4525                4530

Ser Ile  Asn Lys Ala Val Thr  Asn Met Gly Thr Ala  Ser Ser Ala
    4535                4540                4545

His Val  Leu His Ser Thr Leu  Pro Val Ser Ser Glu  Pro Ser Thr
    4550                4555                4560

Ala Thr  Ser Pro Met Val Pro  Ala Ser Ser Met Gly  Asp Ala Leu
    4565                4570                4575

Ala Ser  Ile Ser Ile Pro Gly  Ser Glu Thr Thr Asp  Ile Glu Gly
    4580                4585                4590

Glu Pro  Thr Ser Ser Leu Thr  Ala Gly Arg Lys Glu  Asn Ser Thr
    4595                4600                4605

Leu Gln  Glu Met Asn Ser Thr  Thr Glu Ser Asn Ile  Ile Leu Ser
```

4610 4615 4620

Asn Val Ser Val Gly Ala Ile Thr Glu Ala Thr Lys Met Glu Val
4625 4630 4635

Pro Ser Phe Asp Ala Thr Phe Ile Pro Thr Pro Ala Gln Ser Thr
4640 4645 4650

Lys Phe Pro Asp Ile Phe Ser Val Ala Ser Ser Arg Leu Ser Asn
4655 4660 4665

Ser Pro Pro Met Thr Ile Ser Thr His Met Thr Thr Thr Gln Thr
4670 4675 4680

Gly Ser Ser Gly Ala Thr Ser Lys Ile Pro Leu Ala Leu Asp Thr
4685 4690 4695

Ser Thr Leu Glu Thr Ser Ala Gly Thr Pro Ser Val Val Thr Glu
4700 4705 4710

Gly Phe Ala His Ser Lys Ile Thr Thr Ala Met Asn Asn Asp Val
4715 4720 4725

Lys Asp Val Ser Gln Thr Asn Pro Pro Phe Gln Asp Glu Ala Ser
4730 4735 4740

Ser Pro Ser Ser Gln Ala Pro Val Leu Val Thr Thr Leu Pro Ser
4745 4750 4755

Ser Val Ala Phe Thr Pro Gln Trp His Ser Thr Ser Ser Pro Val
4760 4765 4770

Ser Met Ser Ser Val Leu Thr Ser Ser Leu Val Lys Thr Ala Gly
4775 4780 4785

Lys Val Asp Thr Ser Leu Glu Thr Val Thr Ser Ser Pro Gln Ser

```
    4790                4795                4800

Met Ser  Asn Thr Leu Asp Asp  Ile Ser Val Thr Ser  Ala Ala Thr
    4805                4810                4815

Thr Asp  Ile Glu Thr Thr His  Pro Ser Ile Asn Thr  Val Val Thr
    4820                4825                4830

Asn Val  Gly Thr Thr Gly Ser  Ala Phe Glu Ser His  Ser Thr Val
    4835                4840                4845

Ser Ala  Tyr Pro Glu Pro Ser  Lys Val Thr Ser Pro  Asn Val Thr
    4850                4855                4860

Thr Ser  Thr Met Glu Asp Thr  Thr Ile Ser Arg Ser  Ile Pro Lys
    4865                4870                4875

Ser Ser  Lys Thr Thr Arg Thr  Glu Thr Glu Thr Thr  Ser Ser Leu
    4880                4885                4890

Thr Pro  Lys Leu Arg Glu Thr  Ser Ile Ser Gln Glu  Ile Thr Ser
    4895                4900                4905

Ser Thr  Glu Thr Ser Thr Val  Pro Tyr Lys Glu Leu  Thr Gly Ala
    4910                4915                4920

Thr Thr  Glu Val Ser Arg Thr  Asp Val Thr Ser Ser  Ser Ser Thr
    4925                4930                4935

Ser Phe  Pro Gly Pro Asp Gln  Ser Thr Val Ser Leu  Asp Ile Ser
    4940                4945                4950

Thr Glu  Thr Asn Thr Arg Leu  Ser Thr Ser Pro Ile  Met Thr Glu
    4955                4960                4965

Ser Ala  Glu Ile Thr Ile Thr  Thr Gln Thr Gly Pro  His Gly Ala
```

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    4970                4975                4980

Thr Ser  Gln Asp Thr Phe Thr  Met Asp Pro Ser Asn  Thr Thr Pro
    4985                4990                4995

Gln Ala  Gly Ile His Ser Ala  Met Thr His Gly Phe  Ser Gln Leu
    5000                5005                5010

Asp Val  Thr Thr Leu Met Ser  Arg Ile Pro Gln Asp  Val Ser Trp
    5015                5020                5025

Thr Ser  Pro Pro Ser Val Asp  Lys Thr Ser Ser Pro  Ser Ser Phe
    5030                5035                5040

Leu Ser  Ser Pro Ala Met Thr  Thr Pro Ser Leu Ile  Ser Ser Thr
    5045                5050                5055

Leu Pro  Glu Asp Lys Leu Ser  Ser Pro Met Thr Ser  Leu Leu Thr
    5060                5065                5070

Ser Gly  Leu Val Lys Ile Thr  Asp Ile Leu Arg Thr  Arg Leu Glu
    5075                5080                5085

Pro Val  Thr Ser Ser Leu Pro  Asn Phe Ser Ser Thr  Ser Asp Lys
    5090                5095                5100

Ile Leu  Ala Thr Ser Lys Asp  Ser Lys Asp Thr Lys  Glu Ile Phe
    5105                5110                5115

Pro Ser  Ile Asn Thr Glu Glu  Thr Asn Val Lys Ala  Asn Asn Ser
    5120                5125                5130

Gly His  Glu Ser His Ser Pro  Ala Leu Ala Asp Ser  Glu Thr Pro
    5135                5140                5145

Lys Ala  Thr Thr Gln Met Val  Ile Thr Thr Thr Val  Gly Asp Pro
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    5150                5155                5160

Ala Pro  Ser Thr Ser Met Pro  Val His Gly Ser Ser  Glu Thr Thr
    5165                5170                5175

Asn Ile  Lys Arg Glu Pro Thr  Tyr Phe Leu Thr Pro  Arg Leu Arg
    5180                5185                5190

Glu Thr  Ser Thr Ser Gln Glu  Ser Ser Phe Pro Thr  Asp Thr Ser
    5195                5200                5205

Phe Leu  Leu Ser Lys Val Pro  Thr Gly Thr Ile Thr  Glu Val Ser
    5210                5215                5220

Ser Thr  Gly Val Asn Ser Ser  Ser Lys Ile Ser Thr  Pro Asp His
    5225                5230                5235

Asp Lys  Ser Thr Val Pro Pro  Asp Thr Phe Thr Gly  Glu Ile Pro
    5240                5245                5250

Arg Val  Phe Thr Ser Ser Ile  Lys Thr Lys Ser Ala  Glu Met Thr
    5255                5260                5265

Ile Thr  Thr Gln Ala Ser Pro  Pro Glu Ser Ala Ser  His Ser Thr
    5270                5275                5280

Leu Pro  Leu Asp Thr Ser Thr  Thr Leu Ser Gln Gly  Gly Thr His
    5285                5290                5295

Ser Thr  Val Thr Gln Gly Phe  Pro Tyr Ser Glu Val  Thr Thr Leu
    5300                5305                5310

Met Gly  Met Gly Pro Gly Asn  Val Ser Trp Met Thr  Thr Pro Pro
    5315                5320                5325

Val Glu  Glu Thr Ser Ser Val  Ser Ser Leu Met Ser  Ser Pro Ala
```

```
    5330                5335                5340

Met Thr  Ser Pro Ser Pro Val  Ser Ser Thr Ser Pro  Gln Ser Ile
    5345                5350                5355

Pro Ser  Ser Pro Leu Pro Val  Thr Ala Leu Pro Thr  Ser Val Leu
    5360                5365                5370

Val Thr  Thr Thr Asp Val Leu  Gly Thr Thr Ser Pro  Glu Ser Val
    5375                5380                5385

Thr Ser  Ser Pro Pro Asn Leu  Ser Ser Ile Thr His  Glu Arg Pro
    5390                5395                5400

Ala Thr  Tyr Lys Asp Thr Ala  His Thr Glu Ala Ala  Met His His
    5405                5410                5415

Ser Thr  Asn Thr Ala Val Thr  Asn Val Gly Thr Ser  Gly Ser Gly
    5420                5425                5430

His Lys  Ser Gln Ser Ser Val  Leu Ala Asp Ser Glu  Thr Ser Lys
    5435                5440                5445

Ala Thr  Pro Leu Met Ser Thr  Thr Ser Thr Leu Gly  Asp Thr Ser
    5450                5455                5460

Val Ser  Thr Ser Thr Pro Asn  Ile Ser Gln Thr Asn  Gln Ile Gln
    5465                5470                5475

Thr Glu  Pro Thr Ala Ser Leu  Ser Pro Arg Leu Arg  Glu Ser Ser
    5480                5485                5490

Thr Ser  Glu Lys Thr Ser Ser  Thr Thr Glu Thr Asn  Thr Ala Phe
    5495                5500                5505

Ser Tyr  Val Pro Thr Gly Ala  Ile Thr Gln Ala Ser  Arg Thr Glu
```

```
    5510                5515                5520

Ile Ser  Ser Ser Arg Thr Ser  Ile Ser Asp Leu Asp  Arg Pro Thr
    5525                5530                5535

Ile Ala  Pro Asp Ile Ser Thr  Gly Met Ile Thr Arg  Leu Phe Thr
    5540                5545                5550

Ser Pro  Ile Met Thr Lys Ser  Ala Glu Met Thr Val  Thr Thr Gln
    5555                5560                5565

Thr Thr  Thr Pro Gly Ala Thr  Ser Gln Gly Ile Leu  Pro Trp Asp
    5570                5575                5580

Thr Ser  Thr Thr Leu Phe Gln  Gly Gly Thr His Ser  Thr Val Ser
    5585                5590                5595

Gln Gly  Phe Pro His Ser Glu  Ile Thr Thr Leu Arg  Ser Arg Thr
    5600                5605                5610

Pro Gly  Asp Val Ser Trp Met  Thr Thr Pro Pro Val  Glu Glu Thr
    5615                5620                5625

Ser Ser  Gly Phe Ser Leu Met  Ser Pro Ser Met Thr  Ser Pro Ser
    5630                5635                5640

Pro Val  Ser Ser Thr Ser Pro  Glu Ser Ile Pro Ser  Ser Pro Leu
    5645                5650                5655

Pro Val  Thr Ala Leu Leu Thr  Ser Val Leu Val Thr  Thr Thr Asn
    5660                5665                5670

Val Leu  Gly Thr Thr Ser Pro  Glu Pro Val Thr Ser  Ser Pro Pro
    5675                5680                5685

Asn Leu  Ser Ser Pro Thr Gln  Glu Arg Leu Thr Thr  Tyr Lys Asp
```

5690 5695 5700

Thr Ala His Thr Glu Ala Met His Ala Ser Met His Thr Asn Thr
5705 5710 5715

Ala Val Ala Asn Val Gly Thr Ser Ile Ser Gly His Glu Ser Gln
5720 5725 5730

Ser Ser Val Pro Ala Asp Ser His Thr Ser Lys Ala Thr Ser Pro
5735 5740 5745

Met Gly Ile Thr Phe Ala Met Gly Asp Thr Ser Val Ser Thr Ser
5750 5755 5760

Thr Pro Ala Phe Phe Glu Thr Arg Ile Gln Thr Glu Ser Thr Ser
5765 5770 5775

Ser Leu Ile Pro Gly Leu Arg Asp Thr Arg Thr Ser Glu Glu Ile
5780 5785 5790

Asn Thr Val Thr Glu Thr Ser Thr Val Leu Ser Glu Val Pro Thr
5795 5800 5805

Thr Thr Thr Thr Thr Glu Val Ser Arg Thr Glu Val Ile Thr Ser Ser
5810 5815 5820

Arg Thr Thr Ile Ser Gly Pro Asp His Ser Lys Met Ser Pro Tyr
5825 5830 5835

Ile Ser Thr Glu Thr Ile Thr Arg Leu Ser Thr Phe Pro Phe Val
5840 5845 5850

Thr Gly Ser Thr Glu Met Ala Ile Thr Asn Gln Thr Gly Pro Ile
5855 5860 5865

Gly Thr Ile Ser Gln Ala Thr Leu Thr Leu Asp Thr Ser Ser Thr

```
    5870                5875                5880

Ala Ser  Trp Glu Gly Thr His  Ser Pro Val Thr Gln  Arg Phe Pro
    5885                5890                5895

His Ser  Glu Glu Thr Thr Thr  Met Ser Arg Ser Thr  Lys Gly Val
    5900                5905                5910

Ser Trp  Gln Ser Pro Pro Ser  Val Glu Glu Thr Ser  Ser Pro Ser
    5915                5920                5925

Ser Pro  Val Pro Leu Pro Ala  Ile Thr Ser His Ser  Ser Leu Tyr
    5930                5935                5940

Ser Ala  Val Ser Gly Ser Ser  Pro Thr Ser Ala Leu  Pro Val Thr
    5945                5950                5955

Ser Leu  Leu Thr Ser Gly Arg  Arg Lys Thr Ile Asp  Met Leu Asp
    5960                5965                5970

Thr His  Ser Glu Leu Val Thr  Ser Ser Leu Pro Ser  Ala Ser Ser
    5975                5980                5985

Phe Ser  Gly Glu Ile Leu Thr  Ser Glu Ala Ser Thr  Asn Thr Glu
    5990                5995                6000

Thr Ile  His Phe Ser Glu Asn  Thr Ala Glu Thr Asn  Met Gly Thr
    6005                6010                6015

Thr Asn  Ser Met His Lys Leu  His Ser Ser Val Ser  Ile His Ser
    6020                6025                6030

Gln Pro  Ser Gly His Thr Pro  Pro Lys Val Thr Gly  Ser Met Met
    6035                6040                6045

Glu Asp  Ala Ile Val Ser Thr  Ser Thr Pro Gly Ser  Pro Glu Thr
```

```
    6050                6055                6060

Lys Asn  Val Asp Arg Asp Ser  Thr Ser Pro Leu Thr  Pro Glu Leu
    6065                6070                6075

Lys Glu  Asp Ser Thr Ala Leu  Val Met Asn Ser Thr  Thr Glu Ser
    6080                6085                6090

Asn Thr  Val Phe Ser Ser Val  Ser Leu Asp Ala Ala  Thr Glu Val
    6095                6100                6105

Ser Arg  Ala Glu Val Thr Tyr  Tyr Asp Pro Thr Phe  Met Pro Ala
    6110                6115                6120

Ser Ala  Gln Ser Thr Lys Ser  Pro Asp Ile Ser Pro  Glu Ala Ser
    6125                6130                6135

Ser Ser  His Ser Asn Ser Pro  Pro Leu Thr Ile Ser  Thr His Lys
    6140                6145                6150

Thr Ile  Ala Thr Gln Thr Gly  Pro Ser Gly Val Thr  Ser Leu Gly
    6155                6160                6165

Gln Leu  Thr Leu Asp Thr Ser  Thr Ile Ala Thr Ser  Ala Gly Thr
    6170                6175                6180

Pro Ser  Ala Arg Thr Gln Asp  Phe Val Asp Ser Glu  Thr Thr Ser
    6185                6190                6195

Val Met  Asn Asn Asp Leu Asn  Asp Val Leu Lys Thr  Ser Pro Phe
    6200                6205                6210

Ser Ala  Glu Glu Ala Asn Ser  Leu Ser Ser Gln Ala  Pro Leu Leu
    6215                6220                6225

Val Thr  Thr Ser Pro Ser Pro  Val Thr Ser Thr Leu  Gln Glu His
```

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    6230                6235                6240

Ser Thr  Ser Ser Leu Val Ser  Val Thr Ser Val Pro  Thr Pro Thr
    6245                6250                6255

Leu Ala  Lys Ile Thr Asp Met  Asp Thr Asn Leu Glu  Pro Val Thr
    6260                6265                6270

Arg Ser  Pro Gln Asn Leu Arg  Asn Thr Leu Ala Thr  Ser Glu Ala
    6275                6280                6285

Thr Thr  Asp Thr His Thr Met  His Pro Ser Ile Asn  Thr Ala Val
    6290                6295                6300

Ala Asn  Val Gly Thr Thr Ser  Ser Pro Asn Glu Phe  Tyr Phe Thr
    6305                6310                6315

Val Ser  Pro Asp Ser Asp Pro  Tyr Lys Ala Thr Ser  Ala Val Val
    6320                6325                6330

Ile Thr  Ser Thr Ser Gly Asp  Ser Ile Val Ser Thr  Ser Met Pro
    6335                6340                6345

Arg Ser  Ser Ala Met Lys Lys  Ile Glu Ser Glu Thr  Thr Phe Ser
    6350                6355                6360

Leu Ile  Phe Arg Leu Arg Glu  Thr Ser Thr Ser Gln  Lys Ile Gly
    6365                6370                6375

Ser Ser  Ser Asp Thr Ser Thr  Val Phe Asp Lys Ala  Phe Thr Ala
    6380                6385                6390

Ala Thr  Thr Glu Val Ser Arg  Thr Glu Leu Thr Ser  Ser Ser Arg
    6395                6400                6405

Thr Ser  Ile Gln Gly Thr Glu  Lys Pro Thr Met Ser  Pro Asp Thr
```

```
    6410                6415                6420

Ser Thr  Arg Ser Val Thr Met  Leu Ser Thr Phe Ala  Gly Leu Thr
    6425                6430                6435

Lys Ser  Glu Glu Arg Thr Ile  Ala Thr Gln Thr Gly  Pro His Arg
    6440                6445                6450

Ala Thr  Ser Gln Gly Thr Leu  Thr Trp Asp Thr Ser  Ile Thr Thr
    6455                6460                6465

Ser Gln  Ala Gly Thr His Ser  Ala Met Thr His Gly  Phe Ser Gln
    6470                6475                6480

Leu Asp  Leu Ser Thr Leu Thr  Ser Arg Val Pro Glu  Tyr Ile Ser
    6485                6490                6495

Gly Thr  Ser Pro Pro Ser Val  Glu Lys Thr Ser Ser  Ser Ser Ser
    6500                6505                6510

Leu Leu  Ser Leu Pro Ala Ile  Thr Ser Pro Ser Pro  Val Pro Thr
    6515                6520                6525

Thr Leu  Pro Glu Ser Arg Pro  Ser Ser Pro Val His  Leu Thr Ser
    6530                6535                6540

Leu Pro  Thr Ser Gly Leu Val  Lys Thr Thr Asp Met  Leu Ala Ser
    6545                6550                6555

Val Ala  Ser Leu Pro Pro Asn  Leu Gly Ser Thr Ser  His Lys Ile
    6560                6565                6570

Pro Thr  Thr Ser Glu Asp Ile  Lys Asp Thr Glu Lys  Met Tyr Pro
    6575                6580                6585

Ser Thr  Asn Ile Ala Val Thr  Asn Val Gly Thr Thr  Thr Ser Glu
```

6590 6595 6600

Lys Glu Ser Tyr Ser Ser Val Pro Ala Tyr Ser Glu Pro Pro Lys
6605 6610 6615

Val Thr Ser Pro Met Val Thr Ser Phe Asn Ile Arg Asp Thr Ile
6620 6625 6630

Val Ser Thr Ser Met Pro Gly Ser Ser Glu Ile Thr Arg Ile Glu
6635 6640 6645

Met Glu Ser Thr Phe Ser Leu Ala His Gly Leu Lys Gly Thr Ser
6650 6655 6660

Thr Ser Gln Asp Pro Ile Val Ser Thr Glu Lys Ser Ala Val Leu
6665 6670 6675

His Lys Leu Thr Thr Gly Ala Thr Glu Thr Ser Arg Thr Glu Val
6680 6685 6690

Ala Ser Ser Arg Arg Thr Ser Ile Pro Gly Pro Asp His Ser Thr
6695 6700 6705

Glu Ser Pro Asp Ile Ser Thr Glu Val Ile Pro Ser Leu Pro Ile
6710 6715 6720

Ser Leu Gly Ile Thr Glu Ser Ser Asn Met Thr Ile Ile Thr Arg
6725 6730 6735

Thr Gly Pro Pro Leu Gly Ser Thr Ser Gln Gly Thr Phe Thr Leu
6740 6745 6750

Asp Thr Pro Thr Thr Ser Ser Arg Ala Gly Thr His Ser Met Ala
6755 6760 6765

Thr Gln Glu Phe Pro His Ser Glu Met Thr Thr Val Met Asn Lys

```
    6770                6775                6780

Asp Pro  Glu Ile Leu Ser Trp  Thr Ile Pro Pro Ser  Ile Glu Lys
    6785                6790                6795

Thr Ser  Phe Ser Ser Ser Leu  Met Pro Ser Pro Ala  Met Thr Ser
    6800                6805                6810

Pro Pro  Val Ser Ser Thr Leu  Pro Lys Thr Ile His  Thr Thr Pro
    6815                6820                6825

Ser Pro  Met Thr Ser Leu Leu  Thr Pro Ser Leu Val  Met Thr Thr
    6830                6835                6840

Asp Thr  Leu Gly Thr Ser Pro  Glu Pro Thr Thr Ser  Ser Pro Pro
    6845                6850                6855

Asn Leu  Ser Ser Thr Ser His  Glu Ile Leu Thr Thr  Asp Glu Asp
    6860                6865                6870

Thr Thr  Ala Ile Glu Ala Met  His Pro Ser Thr Ser  Thr Ala Ala
    6875                6880                6885

Thr Asn  Val Glu Thr Thr Ser  Ser Gly His Gly Ser  Gln Ser Ser
    6890                6895                6900

Val Leu  Ala Asp Ser Glu Lys  Thr Lys Ala Thr Ala  Pro Met Asp
    6905                6910                6915

Thr Thr  Ser Thr Met Gly His  Thr Thr Val Ser Thr  Ser Met Ser
    6920                6925                6930

Val Ser  Ser Glu Thr Thr Lys  Ile Lys Arg Glu Ser  Thr Tyr Ser
    6935                6940                6945

Leu Thr  Pro Gly Leu Arg Glu  Thr Ser Ile Ser Gln  Asn Ala Ser
```

```
    6950                6955                6960

Phe Ser  Thr Asp Thr Ser Ile  Val Leu Ser Glu Val  Pro Thr Gly
    6965                6970                6975

Thr Thr  Ala Glu Val Ser Arg  Thr Glu Val Thr Ser  Ser Gly Arg
    6980                6985                6990

Thr Ser  Ile Pro Gly Pro Ser  Gln Ser Thr Val Leu  Pro Glu Ile
    6995                7000                7005

Ser Thr  Arg Thr Met Thr Arg  Leu Phe Ala Ser Pro  Thr Met Thr
    7010                7015                7020

Glu Ser  Ala Glu Met Thr Ile  Pro Thr Gln Thr Gly  Pro Ser Gly
    7025                7030                7035

Ser Thr  Ser Gln Asp Thr Leu  Thr Leu Asp Thr Ser  Thr Thr Lys
    7040                7045                7050

Ser Gln  Ala Lys Thr His Ser  Thr Leu Thr Gln Arg  Phe Pro His
    7055                7060                7065

Ser Glu  Met Thr Thr Leu Met  Ser Arg Gly Pro Gly  Asp Met Ser
    7070                7075                7080

Trp Gln  Ser Ser Pro Ser Leu  Glu Asn Pro Ser Ser  Leu Pro Ser
    7085                7090                7095

Leu Leu  Ser Leu Pro Ala Thr  Thr Ser Pro Pro Pro  Ile Ser Ser
    7100                7105                7110

Thr Leu  Pro Val Thr Ile Ser  Ser Ser Pro Leu Pro  Val Thr Ser
    7115                7120                7125

Leu Leu  Thr Ser Ser Pro Val  Thr Thr Thr Asp Met  Leu His Thr
```

7130 7135 7140

Ser Pro Glu Leu Val Thr Ser Ser Pro Pro Lys Leu Ser His Thr
7145 7150 7155

Ser Asp Glu Arg Leu Thr Thr Gly Lys Asp Thr Thr Asn Thr Glu
7160 7165 7170

Ala Val His Pro Ser Thr Asn Thr Ala Ala Ser Asn Val Glu Ile
7175 7180 7185

Pro Ser Ser Gly His Glu Ser Pro Ser Ser Ala Leu Ala Asp Ser
7190 7195 7200

Glu Thr Ser Lys Ala Thr Ser Pro Met Phe Ile Thr Ser Thr Gln
7205 7210 7215

Glu Asp Thr Thr Val Ala Ile Ser Thr Pro His Phe Leu Glu Thr
7220 7225 7230

Ser Arg Ile Gln Lys Glu Ser Ile Ser Ser Leu Ser Pro Lys Leu
7235 7240 7245

Arg Glu Thr Gly Ser Ser Val Glu Thr Ser Ser Ala Ile Glu Thr
7250 7255 7260

Ser Ala Val Leu Ser Glu Val Ser Ile Gly Ala Thr Thr Glu Ile
7265 7270 7275

Ser Arg Thr Glu Val Thr Ser Ser Ser Arg Thr Ser Ile Ser Gly
7280 7285 7290

Ser Ala Glu Ser Thr Met Leu Pro Glu Ile Ser Thr Thr Arg Lys
7295 7300 7305

Ile Ile Lys Phe Pro Thr Ser Pro Ile Leu Ala Glu Ser Ser Glu

7310 7315 7320

Met Thr Ile Lys Thr Gln Thr Ser Pro Pro Gly Ser Thr Ser Glu
7325 7330 7335

Ser Thr Phe Thr Leu Asp Thr Ser Thr Thr Pro Ser Leu Val Ile
7340 7345 7350

Thr His Ser Thr Met Thr Gln Arg Leu Pro His Ser Glu Ile Thr
7355 7360 7365

Thr Leu Val Ser Arg Gly Ala Gly Asp Val Pro Arg Pro Ser Ser
7370 7375 7380

Leu Pro Val Glu Glu Thr Ser Pro Pro Ser Ser Gln Leu Ser Leu
7385 7390 7395

Ser Ala Met Ile Ser Pro Ser Pro Val Ser Ser Thr Leu Pro Ala
7400 7405 7410

Ser Ser His Ser Ser Ser Ala Ser Val Thr Ser Leu Leu Thr Pro
7415 7420 7425

Gly Gln Val Lys Thr Thr Glu Val Leu Asp Ala Ser Ala Glu Pro
7430 7435 7440

Glu Thr Ser Ser Pro Pro Ser Leu Ser Ser Thr Ser Val Glu Ile
7445 7450 7455

Leu Ala Thr Ser Glu Val Thr Thr Asp Thr Glu Lys Ile His Pro
7460 7465 7470

Phe Ser Asn Thr Ala Val Thr Lys Val Gly Thr Ser Ser Ser Gly
7475 7480 7485

His Glu Ser Pro Ser Ser Val Leu Pro Asp Ser Glu Thr Thr Lys

```
    7490                7495                7500

Ala Thr  Ser Ala Met Gly Thr  Ile Ser Ile Met Gly  Asp Thr Ser
    7505                7510                7515

Val Ser  Thr Leu Thr Pro Ala  Leu Ser Asn Thr Arg  Lys Ile Gln
    7520                7525                7530

Ser Glu  Pro Ala Ser Ser Leu  Thr Thr Arg Leu Arg  Glu Thr Ser
    7535                7540                7545

Thr Ser  Glu Glu Thr Ser Leu  Ala Thr Glu Ala Asn  Thr Val Leu
    7550                7555                7560

Ser Lys  Val Ser Thr Gly Ala  Thr Thr Glu Val Ser  Arg Thr Glu
    7565                7570                7575

Ala Ile  Ser Phe Ser Arg Thr  Ser Met Ser Gly Pro  Glu Gln Ser
    7580                7585                7590

Thr Met  Ser Gln Asp Ile Ser  Ile Gly Thr Ile Pro  Arg Ile Ser
    7595                7600                7605

Ala Ser  Ser Val Leu Thr Glu  Ser Ala Lys Met Thr  Ile Thr Thr
    7610                7615                7620

Gln Thr  Gly Pro Ser Glu Ser  Thr Leu Glu Ser Thr  Leu Asn Leu
    7625                7630                7635

Asn Thr  Ala Thr Thr Pro Ser  Trp Val Glu Thr His  Ser Ile Val
    7640                7645                7650

Ile Gln  Gly Phe Pro His Pro  Glu Met Thr Thr Ser  Met Gly Arg
    7655                7660                7665

Gly Pro  Gly Gly Val Ser Trp  Pro Ser Pro Pro Phe  Val Lys Glu
```

```
    7670                7675                7680

Thr Ser  Pro Pro Ser Ser Pro  Leu Ser Leu Pro Ala  Val Thr Ser
    7685                7690                7695

Pro His  Pro Val Ser Thr Thr  Phe Leu Ala His Ile  Pro Pro Ser
    7700                7705                7710

Pro Leu  Pro Val Thr Ser Leu  Leu Thr Ser Gly Pro  Ala Thr Thr
    7715                7720                7725

Thr Asp  Ile Leu Gly Thr Ser  Thr Glu Pro Gly Thr  Ser Ser Ser
    7730                7735                7740

Ser Ser  Leu Ser Thr Thr Ser  His Glu Arg Leu Thr  Thr Tyr Lys
    7745                7750                7755

Asp Thr  Ala His Thr Glu Ala  Val His Pro Ser Thr  Asn Thr Gly
    7760                7765                7770

Gly Thr  Asn Val Ala Thr Thr  Ser Ser Gly Tyr Lys  Ser Gln Ser
    7775                7780                7785

Ser Val  Leu Ala Asp Ser Ser  Pro Met Cys Thr Thr  Ser Thr Met
    7790                7795                7800

Gly Asp  Thr Ser Val Leu Thr  Ser Thr Pro Ala Phe  Leu Glu Thr
    7805                7810                7815

Arg Arg  Ile Gln Thr Glu Leu  Ala Ser Ser Leu Thr  Pro Gly Leu
    7820                7825                7830

Arg Glu  Ser Ser Gly Ser Glu  Gly Thr Ser Ser Gly  Thr Lys Met
    7835                7840                7845

Ser Thr  Val Leu Ser Lys Val  Pro Thr Gly Ala Thr  Thr Glu Ile
```

```
    7850                7855                7860

Ser Lys  Glu Asp Val Thr Ser  Ile Pro Gly Pro Ala  Gln Ser Thr
    7865                7870                7875

Ile Ser  Pro Asp Ile Ser Thr  Arg Thr Val Ser Trp  Phe Ser Thr
    7880                7885                7890

Ser Pro  Val Met Thr Glu Ser  Ala Glu Ile Thr Met  Asn Thr His
    7895                7900                7905

Thr Ser  Pro Leu Gly Ala Thr  Thr Gln Gly Thr Ser  Thr Leu Asp
    7910                7915                7920

Thr Ser  Ser Thr Thr Ser Leu  Thr Met Thr His Ser  Thr Ile Ser
    7925                7930                7935

Gln Gly  Phe Ser His Ser Gln  Met Ser Thr Leu Met  Arg Arg Gly
    7940                7945                7950

Pro Glu  Asp Val Ser Trp Met  Ser Pro Pro Leu Leu  Glu Lys Thr
    7955                7960                7965

Arg Pro  Ser Phe Ser Leu Met  Ser Ser Pro Ala Thr  Thr Ser Pro
    7970                7975                7980

Ser Pro  Val Ser Ser Thr Leu  Pro Glu Ser Ile Ser  Ser Ser Pro
    7985                7990                7995

Leu Pro  Val Thr Ser Leu Leu  Thr Ser Gly Leu Ala  Lys Thr Thr
    8000                8005                8010

Asp Met  Leu His Lys Ser Ser  Glu Pro Val Thr Asn  Ser Pro Ala
    8015                8020                8025

Asn Leu  Ser Ser Thr Ser Val  Glu Ile Leu Ala Thr  Ser Glu Val
```

```
    8030                8035                8040

Thr Thr  Asp Thr Glu Lys Thr  His Pro Ser Ser Asn  Arg Thr Val
    8045                8050                8055

Thr Asp  Val Gly Thr Ser Ser  Ser Gly His Glu Ser  Thr Ser Phe
    8060                8065                8070

Val Leu  Ala Asp Ser Gln Thr  Ser Lys Val Thr Ser  Pro Met Val
    8075                8080                8085

Ile Thr  Ser Thr Met Glu Asp  Thr Ser Val Ser Thr  Ser Thr Pro
    8090                8095                8100

Gly Phe  Phe Glu Thr Ser Arg  Ile Gln Thr Glu Pro  Thr Ser Ser
    8105                8110                8115

Leu Thr  Leu Gly Leu Arg Lys  Thr Ser Ser Ser Glu  Gly Thr Ser
    8120                8125                8130

Leu Ala  Thr Glu Met Ser Thr  Val Leu Ser Gly Val  Pro Thr Gly
    8135                8140                8145

Ala Thr  Ala Glu Val Ser Arg  Thr Glu Val Thr Ser  Ser Ser Arg
    8150                8155                8160

Thr Ser  Ile Ser Gly Phe Ala  Gln Leu Thr Val Ser  Pro Glu Thr
    8165                8170                8175

Ser Thr  Glu Thr Ile Thr Arg  Leu Pro Thr Ser Ser  Ile Met Thr
    8180                8185                8190

Glu Ser  Ala Glu Met Met Ile  Lys Thr Gln Thr Asp  Pro Pro Gly
    8195                8200                8205

Ser Thr  Pro Glu Ser Thr His  Thr Val Asp Ile Ser  Thr Thr Pro
```

8210 8215 8220

Asn Trp Val Glu Thr His Ser Thr Val Thr Gln Arg Phe Ser His
8225 8230 8235

Ser Glu Met Thr Thr Leu Val Ser Arg Ser Pro Gly Asp Met Leu
8240 8245 8250

Trp Pro Ser Gln Ser Ser Val Glu Glu Thr Ser Ser Ala Ser Ser
8255 8260 8265

Leu Leu Ser Leu Pro Ala Thr Thr Ser Pro Ser Pro Val Ser Ser
8270 8275 8280

Thr Leu Val Glu Asp Phe Pro Ser Ala Ser Leu Pro Val Thr Ser
8285 8290 8295

Leu Leu Asn Pro Gly Leu Val Ile Thr Thr Asp Arg Met Gly Ile
8300 8305 8310

Ser Arg Glu Pro Gly Thr Ser Ser Thr Ser Asn Leu Ser Ser Thr
8315 8320 8325

Ser His Glu Arg Leu Thr Thr Leu Glu Asp Thr Val Asp Thr Glu
8330 8335 8340

Asp Met Gln Pro Ser Thr His Thr Ala Val Thr Asn Val Arg Thr
8345 8350 8355

Ser Ile Ser Gly His Glu Ser Gln Ser Ser Val Leu Ser Asp Ser
8360 8365 8370

Glu Thr Pro Lys Ala Thr Ser Pro Met Gly Thr Thr Tyr Thr Met
8375 8380 8385

Gly Glu Thr Ser Val Ser Ile Ser Thr Ser Asp Phe Phe Glu Thr

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    8390                8395                8400

Ser Arg  Ile Gln Ile Glu Pro  Thr Ser Ser Leu Thr  Ser Gly Leu
    8405                8410                8415

Arg Glu  Thr Ser Ser Ser Glu  Arg Ile Ser Ser Ala  Thr Glu Gly
    8420                8425                8430

Ser Thr  Val Leu Ser Glu Val  Pro Ser Gly Ala Thr  Thr Glu Val
    8435                8440                8445

Ser Arg  Thr Glu Val Ile Ser  Ser Arg Gly Thr Ser  Met Ser Gly
    8450                8455                8460

Pro Asp  Gln Phe Thr Ile Ser  Pro Asp Ile Ser Thr  Glu Ala Ile
    8465                8470                8475

Thr Arg  Leu Ser Thr Ser Pro  Ile Met Thr Glu Ser  Ala Glu Ser
    8480                8485                8490

Ala Ile  Thr Ile Glu Thr Gly  Ser Pro Gly Ala Thr  Ser Glu Gly
    8495                8500                8505

Thr Leu  Thr Leu Asp Thr Ser  Thr Thr Thr Phe Trp  Ser Gly Thr
    8510                8515                8520

His Ser  Thr Ala Ser Pro Gly  Phe Ser His Ser Glu  Met Thr Thr
    8525                8530                8535

Leu Met  Ser Arg Thr Pro Gly  Asp Val Pro Trp Pro  Ser Leu Pro
    8540                8545                8550

Ser Val  Glu Glu Ala Ser Ser  Val Ser Ser Ser Leu  Ser Ser Pro
    8555                8560                8565

Ala Met  Thr Ser Thr Ser Phe  Phe Ser Thr Leu Pro  Glu Ser Ile
```

8570 8575 8580

Ser Ser Ser Pro His Pro Val Thr Ala Leu Leu Thr Leu Gly Pro
8585 8590 8595

Val Lys Thr Thr Asp Met Leu Arg Thr Ser Ser Glu Pro Glu Thr
8600 8605 8610

Ser Ser Pro Pro Asn Leu Ser Ser Thr Ser Ala Glu Ile Leu Ala
8615 8620 8625

Thr Ser Glu Val Thr Lys Asp Arg Glu Lys Ile His Pro Ser Ser
8630 8635 8640

Asn Thr Pro Val Val Asn Val Gly Thr Val Ile Tyr Lys His Leu
8645 8650 8655

Ser Pro Ser Ser Val Leu Ala Asp Leu Val Thr Thr Lys Pro Thr
8660 8665 8670

Ser Pro Met Ala Thr Thr Ser Thr Leu Gly Asn Thr Ser Val Ser
8675 8680 8685

Thr Ser Thr Pro Ala Phe Pro Glu Thr Met Met Thr Gln Pro Thr
8690 8695 8700

Ser Ser Leu Thr Ser Gly Leu Arg Glu Ile Ser Thr Ser Gln Glu
8705 8710 8715

Thr Ser Ser Ala Thr Glu Arg Ser Ala Ser Leu Ser Gly Met Pro
8720 8725 8730

Thr Gly Ala Thr Thr Lys Val Ser Arg Thr Glu Ala Leu Ser Leu
8735 8740 8745

Gly Arg Thr Ser Thr Pro Gly Pro Ala Gln Ser Thr Ile Ser Pro

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    8750                8755                8760

Glu Ile  Ser Thr Glu Thr Ile  Thr Arg Ile Ser Thr  Pro Leu Thr
    8765                8770                8775

Thr Thr  Gly Ser Ala Glu Met  Thr Ile Thr Pro Lys  Thr Gly His
    8780                8785                8790

Ser Gly  Ala Ser Ser Gln Gly  Thr Phe Thr Leu Asp  Thr Ser Ser
    8795                8800                8805

Arg Ala  Ser Trp Pro Gly Thr  His Ser Ala Ala Thr  His Arg Ser
    8810                8815                8820

Pro His  Ser Gly Met Thr Thr  Pro Met Ser Arg Gly  Pro Glu Asp
    8825                8830                8835

Val Ser  Trp Pro Ser Arg Pro  Ser Val Glu Lys Thr  Ser Pro Pro
    8840                8845                8850

Ser Ser  Leu Val Ser Leu Ser  Ala Val Thr Ser Pro  Ser Pro Leu
    8855                8860                8865

Tyr Ser  Thr Pro Ser Glu Ser  Ser His Ser Ser Pro  Leu Arg Val
    8870                8875                8880

Thr Ser  Leu Phe Thr Pro Val  Met Met Lys Thr Thr  Asp Met Leu
    8885                8890                8895

Asp Thr  Ser Leu Glu Pro Val  Thr Thr Ser Pro Pro  Ser Met Asn
    8900                8905                8910

Ile Thr  Ser Asp Glu Ser Leu  Ala Thr Ser Lys Ala  Thr Met Glu
    8915                8920                8925

Thr Glu  Ala Ile Gln Leu Ser  Glu Asn Thr Ala Val  Thr Gln Met
```

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    8930                8935                8940

Gly Thr  Ile Ser Ala Arg Gln  Glu Phe Tyr Ser Ser  Tyr Pro Gly
    8945                8950                8955

Leu Pro  Glu Pro Ser Lys Val  Thr Ser Pro Val Val  Thr Ser Ser
    8960                8965                8970

Thr Ile  Lys Asp Ile Val Ser  Thr Thr Ile Pro Ala  Ser Ser Glu
    8975                8980                8985

Ile Thr  Arg Ile Glu Met Glu  Ser Thr Ser Thr Leu  Thr Pro Thr
    8990                8995                9000

Pro Arg  Glu Thr Ser Thr Ser  Gln Glu Ile His Ser  Ala Thr Lys
    9005                9010                9015

Pro Ser  Thr Val Pro Tyr Lys  Ala Leu Thr Ser Ala  Thr Ile Glu
    9020                9025                9030

Asp Ser  Met Thr Gln Val Met  Ser Ser Ser Arg Gly  Pro Ser Pro
    9035                9040                9045

Asp Gln  Ser Thr Met Ser Gln  Asp Ile Ser Thr Glu  Val Ile Thr
    9050                9055                9060

Arg Leu  Ser Thr Ser Pro Ile  Lys Thr Glu Ser Thr  Glu Met Thr
    9065                9070                9075

Ile Thr  Thr Gln Thr Gly Ser  Pro Gly Ala Thr Ser  Arg Gly Thr
    9080                9085                9090

Leu Thr  Leu Asp Thr Ser Thr  Thr Phe Met Ser Gly  Thr His Ser
    9095                9100                9105

Thr Ala  Ser Gln Gly Phe Ser  His Ser Gln Met Thr  Ala Leu Met
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    9110                9115                9120

Ser Arg  Thr Pro Gly Asp Val  Pro Trp Leu Ser His  Pro Ser Val
    9125                9130                9135

Glu Glu  Ala Ser Ser Ala Ser  Phe Ser Leu Ser Ser  Pro Val Met
    9140                9145                9150

Thr Ser  Ser Ser Pro Val Ser  Ser Thr Leu Pro Asp  Ser Ile His
    9155                9160                9165

Ser Ser  Ser Leu Pro Val Thr  Ser Leu Leu Thr Ser  Gly Leu Val
    9170                9175                9180

Lys Thr  Thr Glu Leu Leu Gly  Thr Ser Ser Glu Pro  Glu Thr Ser
    9185                9190                9195

Ser Pro  Pro Asn Leu Ser Ser  Thr Ser Ala Glu Ile  Leu Ala Ile
    9200                9205                9210

Thr Glu  Val Thr Thr Asp Thr  Glu Lys Leu Glu Met  Thr Asn Val
    9215                9220                9225

Val Thr  Ser Gly Tyr Thr His  Glu Ser Pro Ser Ser  Val Leu Ala
    9230                9235                9240

Asp Ser  Val Thr Thr Lys Ala  Thr Ser Ser Met Gly  Ile Thr Tyr
    9245                9250                9255

Pro Thr  Gly Asp Thr Asn Val  Leu Thr Ser Thr Pro  Ala Phe Ser
    9260                9265                9270

Asp Thr  Ser Arg Ile Gln Thr  Lys Ser Lys Leu Ser  Leu Thr Pro
    9275                9280                9285

Gly Leu  Met Glu Thr Ser Ile  Ser Glu Glu Thr Ser  Ser Ala Thr
```

9290 9295 9300

Glu Lys Ser Thr Val Leu Ser Ser Val Pro Thr Gly Ala Thr Thr
9305 9310 9315

Glu Val Ser Arg Thr Glu Ala Ile Ser Ser Ser Arg Thr Ser Ile
9320 9325 9330

Pro Gly Pro Ala Gln Ser Thr Met Ser Ser Asp Thr Ser Met Glu
9335 9340 9345

Thr Ile Thr Arg Ile Ser Thr Pro Leu Thr Arg Lys Glu Ser Thr
9350 9355 9360

Asp Met Ala Ile Thr Pro Lys Thr Gly Pro Ser Gly Ala Thr Ser
9365 9370 9375

Gln Gly Thr Phe Thr Leu Asp Ser Ser Ser Thr Ala Ser Trp Pro
9380 9385 9390

Gly Thr His Ser Ala Thr Thr Gln Arg Phe Pro Gln Ser Val Val
9395 9400 9405

Thr Thr Pro Met Ser Arg Gly Pro Glu Asp Val Ser Trp Pro Ser
9410 9415 9420

Pro Leu Ser Val Glu Lys Asn Ser Pro Pro Ser Ser Leu Val Ser
9425 9430 9435

Ser Ser Ser Val Thr Ser Pro Ser Pro Leu Tyr Ser Thr Pro Ser
9440 9445 9450

Gly Ser Ser His Ser Ser Pro Val Pro Val Thr Ser Leu Phe Thr
9455 9460 9465

Ser Ile Met Met Lys Ala Thr Asp Met Leu Asp Ala Ser Leu Glu

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    9470                9475                9480

Pro Glu  Thr Thr Ser Ala Pro  Asn Met Asn Ile Thr  Ser Asp Glu
    9485                9490                9495

Ser Leu  Ala Ala Ser Lys Ala  Thr Thr Glu Thr Glu  Ala Ile His
    9500                9505                9510

Val Phe  Glu Asn Thr Ala Ala  Ser His Val Glu Thr  Thr Ser Ala
    9515                9520                9525

Thr Glu  Glu Leu Tyr Ser Ser  Ser Pro Gly Phe Ser  Glu Pro Thr
    9530                9535                9540

Lys Val  Ile Ser Pro Val Val  Thr Ser Ser Ser Ile  Arg Asp Asn
    9545                9550                9555

Met Val  Ser Thr Thr Met Pro  Gly Ser Ser Gly Ile  Thr Arg Ile
    9560                9565                9570

Glu Ile  Glu Ser Met Ser Ser  Leu Thr Pro Gly Leu  Arg Glu Thr
    9575                9580                9585

Arg Thr  Ser Gln Asp Ile Thr  Ser Ser Thr Glu Thr  Ser Thr Val
    9590                9595                9600

Leu Tyr  Lys Met Pro Ser Gly  Ala Thr Pro Glu Val  Ser Arg Thr
    9605                9610                9615

Glu Val  Met Pro Ser Ser Arg  Thr Ser Ile Pro Gly  Pro Ala Gln
    9620                9625                9630

Ser Thr  Met Ser Leu Asp Ile  Ser Asp Glu Val Val  Thr Arg Leu
    9635                9640                9645

Ser Thr  Ser Pro Ile Met Thr  Glu Ser Ala Glu Ile  Thr Ile Thr
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9650 9655 9660

Thr Gln Thr Gly Tyr Ser Leu Ala Thr Ser Gln Val Thr Leu Pro
9665 9670 9675

Leu Gly Thr Ser Met Thr Phe Leu Ser Gly Thr His Ser Thr Met
9680 9685 9690

Ser Gln Gly Leu Ser His Ser Glu Met Thr Asn Leu Met Ser Arg
9695 9700 9705

Gly Pro Glu Ser Leu Ser Trp Thr Ser Pro Arg Phe Val Glu Thr
9710 9715 9720

Thr Arg Ser Ser Ser Ser Leu Thr Ser Leu Pro Leu Thr Thr Ser
9725 9730 9735

Leu Ser Pro Val Ser Ser Thr Leu Leu Asp Ser Ser Pro Ser Ser
9740 9745 9750

Pro Leu Pro Val Thr Ser Leu Ile Leu Pro Gly Leu Val Lys Thr
9755 9760 9765

Thr Glu Val Leu Asp Thr Ser Ser Glu Pro Lys Thr Ser Ser Ser
9770 9775 9780

Pro Asn Leu Ser Ser Thr Ser Val Glu Ile Pro Ala Thr Ser Glu
9785 9790 9795

Ile Met Thr Asp Thr Glu Lys Ile His Pro Ser Ser Asn Thr Ala
9800 9805 9810

Val Ala Lys Val Arg Thr Ser Ser Ser Val His Glu Ser His Ser
9815 9820 9825

Ser Val Leu Ala Asp Ser Glu Thr Thr Ile Thr Ile Pro Ser Met

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    9830                9835                9840

Gly Ile  Thr Ser Ala Val Asp  Asp Thr Thr Val Phe  Thr Ser Asn
    9845                9850                9855

Pro Ala  Phe Ser Glu Thr Arg  Arg Ile Pro Thr Glu  Pro Thr Phe
    9860                9865                9870

Ser Leu  Thr Pro Gly Phe Arg  Glu Thr Ser Thr Ser  Glu Glu Thr
    9875                9880                9885

Thr Ser  Ile Thr Glu Thr Ser  Ala Val Leu Tyr Gly  Val Pro Thr
    9890                9895                9900

Ser Ala  Thr Thr Glu Val Ser  Met Thr Glu Ile Met  Ser Ser Asn
    9905                9910                9915

Arg Ile  His Ile Pro Asp Ser  Asp Gln Ser Thr Met  Ser Pro Asp
    9920                9925                9930

Ile Ile  Thr Glu Val Ile Thr  Arg Leu Ser Ser Ser  Ser Met Met
    9935                9940                9945

Ser Glu  Ser Thr Gln Met Thr  Ile Thr Thr Gln Lys  Ser Ser Pro
    9950                9955                9960

Gly Ala  Thr Ala Gln Ser Thr  Leu Thr Leu Ala Thr  Thr Thr Ala
    9965                9970                9975

Pro Leu  Ala Arg Thr His Ser  Thr Val Pro Pro Arg  Phe Leu His
    9980                9985                9990

Ser Glu  Met Thr Thr Leu Met   Ser Arg Ser Pro Glu   Asn Pro Ser
    9995                10000                10005

Trp Lys   Ser Ser Leu Phe Val   Glu Lys Thr Ser Ser   Ser Ser Ser
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    10010                10015                10020

Leu Leu   Ser Leu Pro Val Thr   Thr Ser Pro Ser Val   Ser Ser Thr
    10025                10030                10035

Leu Pro   Gln Ser Ile Pro Ser   Ser Ser Phe Ser Val   Thr Ser Leu
    10040                10045                10050

Leu Thr   Pro Gly Met Val Lys   Thr Thr Asp Thr Ser   Thr Glu Pro
    10055                10060                10065

Gly Thr   Ser Leu Ser Pro Asn   Leu Ser Gly Thr Ser   Val Glu Ile
    10070                10075                10080

Leu Ala   Ala Ser Glu Val Thr   Thr Asp Thr Glu Lys   Ile His Pro
    10085                10090                10095

Ser Ser   Ser Met Ala Val Thr   Asn Val Gly Thr Thr   Ser Ser Gly
    10100                10105                10110

His Glu   Leu Tyr Ser Ser Val   Ser Ile His Ser Glu   Pro Ser Lys
    10115                10120                10125

Ala Thr   Tyr Pro Val Gly Thr   Pro Ser Ser Met Ala   Glu Thr Ser
    10130                10135                10140

Ile Ser   Thr Ser Met Pro Ala   Asn Phe Glu Thr Thr   Gly Phe Glu
    10145                10150                10155

Ala Glu   Pro Phe Ser His Leu   Thr Ser Gly Phe Arg   Lys Thr Asn
    10160                10165                10170

Met Ser   Leu Asp Thr Ser Ser   Val Thr Pro Thr Asn   Thr Pro Ser
    10175                10180                10185

Ser Pro   Gly Ser Thr His Leu   Leu Gln Ser Ser Lys   Thr Asp Phe
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    10190                10195                10200

Thr Ser   Ser Ala Lys Thr Ser   Ser Pro Asp Trp Pro   Pro Ala Ser
    10205                10210                10215

Gln Tyr   Thr Glu Ile Pro Val   Asp Ile Ile Thr Pro   Phe Asn Ala
    10220                10225                10230

Ser Pro   Ser Ile Thr Glu Ser   Thr Gly Ile Thr Ser   Phe Pro Glu
    10235                10240                10245

Ser Arg   Phe Thr Met Ser Val   Thr Glu Ser Thr His   His Leu Ser
    10250                10255                10260

Thr Asp   Leu Leu Pro Ser Ala   Glu Thr Ile Ser Thr   Gly Thr Val
    10265                10270                10275

Met Pro   Ser Leu Ser Glu Ala   Met Thr Ser Phe Ala   Thr Thr Gly
    10280                10285                10290

Val Pro   Arg Ala Ile Ser Gly   Ser Gly Ser Pro Phe   Ser Arg Thr
    10295                10300                10305

Glu Ser   Gly Pro Gly Asp Ala   Thr Leu Ser Thr Ile   Ala Glu Ser
    10310                10315                10320

Leu Pro   Ser Ser Thr Pro Val   Pro Phe Ser Ser Ser   Thr Phe Thr
    10325                10330                10335

Thr Thr   Asp Ser Ser Thr Ile   Pro Ala Leu His Glu   Ile Thr Ser
    10340                10345                10350

Ser Ser   Ala Thr Pro Tyr Arg   Val Asp Thr Ser Leu   Gly Thr Glu
    10355                10360                10365

Ser Ser   Thr Thr Glu Gly Arg   Leu Val Met Val Ser   Thr Leu Asp
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    10370                 10375                 10380

Thr Ser   Ser Gln Pro Gly Arg   Thr Ser Ser Ser Pro   Ile Leu Asp
    10385                 10390                 10395

Thr Arg   Met Thr Glu Ser Val   Glu Leu Gly Thr Val   Thr Ser Ala
    10400                 10405                 10410

Tyr Gln   Val Pro Ser Leu Ser   Thr Arg Leu Thr Arg   Thr Asp Gly
    10415                 10420                 10425

Ile Met   Glu His Ile Thr Lys   Ile Pro Asn Glu Ala   Ala His Arg
    10430                 10435                 10440

Gly Thr   Ile Arg Pro Val Lys   Gly Pro Gln Thr Ser   Thr Ser Pro
    10445                 10450                 10455

Ala Ser   Pro Lys Gly Leu His   Thr Gly Gly Thr Lys   Arg Met Glu
    10460                 10465                 10470

Thr Thr   Thr Thr Ala Leu Lys   Thr Thr Thr Thr Ala   Leu Lys Thr
    10475                 10480                 10485

Thr Ser   Arg Ala Thr Leu Thr   Thr Ser Val Tyr Thr   Pro Thr Leu
    10490                 10495                 10500

Gly Thr   Leu Thr Pro Leu Asn   Ala Ser Met Gln Met   Ala Ser Thr
    10505                 10510                 10515

Ile Pro   Thr Glu Met Met Ile   Thr Thr Pro Tyr Val   Phe Pro Asp
    10520                 10525                 10530

Val Pro   Glu Thr Thr Ser Ser   Leu Ala Thr Ser Leu   Gly Ala Glu
    10535                 10540                 10545

Thr Ser   Thr Ala Leu Pro Arg   Thr Thr Pro Ser Val   Phe Asn Arg
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    10550                 10555                 10560

Glu Ser   Glu Thr Thr Ala Ser   Leu Val Ser Arg Ser   Gly Ala Glu
    10565                 10570                 10575

Arg Ser   Pro Val Ile Gln Thr   Leu Asp Val Ser Ser   Ser Glu Pro
    10580                 10585                 10590

Asp Thr   Thr Ala Ser Trp Val   Ile His Pro Ala Glu   Thr Ile Pro
    10595                 10600                 10605

Thr Val   Ser Lys Thr Thr Pro   Asn Phe Phe His Ser   Glu Leu Asp
    10610                 10615                 10620

Thr Val   Ser Ser Thr Ala Thr   Ser His Gly Ala Asp   Val Ser Ser
    10625                 10630                 10635

Ala Ile   Pro Thr Asn Ile Ser   Pro Ser Glu Leu Asp   Ala Leu Thr
    10640                 10645                 10650

Pro Leu   Val Thr Ile Ser Gly   Thr Asp Thr Ser Thr   Thr Phe Pro
    10655                 10660                 10665

Thr Leu   Thr Lys Ser Pro His   Glu Thr Glu Thr Arg   Thr Thr Trp
    10670                 10675                 10680

Leu Thr   His Pro Ala Glu Thr   Ser Ser Thr Ile Pro   Arg Thr Ile
    10685                 10690                 10695

Pro Asn   Phe Ser His His Glu   Ser Asp Ala Thr Pro   Ser Ile Ala
    10700                 10705                 10710

Thr Ser   Pro Gly Ala Glu Thr   Ser Ser Ala Ile Pro   Ile Met Thr
    10715                 10720                 10725

Val Ser   Pro Gly Ala Glu Asp   Leu Val Thr Ser Gln   Val Thr Ser
```

10730 10735 10740

Ser Gly Thr Asp Arg Asn Met Thr Ile Pro Thr Leu Thr Leu Ser
10745 10750 10755

Pro Gly Glu Pro Lys Thr Ile Ala Ser Leu Val Thr His Pro Glu
10760 10765 10770

Ala Gln Thr Ser Ser Ala Ile Pro Thr Ser Thr Ile Ser Pro Ala
10775 10780 10785

Val Ser Arg Leu Val Thr Ser Met Val Thr Ser Leu Ala Ala Lys
10790 10795 10800

Thr Ser Thr Thr Asn Arg Ala Leu Thr Asn Ser Pro Gly Glu Pro
10805 10810 10815

Ala Thr Thr Val Ser Leu Val Thr His Pro Ala Gln Thr Ser Pro
10820 10825 10830

Thr Val Pro Trp Thr Thr Ser Ile Phe Phe His Ser Lys Ser Asp
10835 10840 10845

Thr Thr Pro Ser Met Thr Thr Ser His Gly Ala Glu Ser Ser Ser
10850 10855 10860

Ala Val Pro Thr Pro Thr Val Ser Thr Glu Val Pro Gly Val Val
10865 10870 10875

Thr Pro Leu Val Thr Ser Ser Arg Ala Val Ile Ser Thr Thr Ile
10880 10885 10890

Pro Ile Leu Thr Leu Ser Pro Gly Glu Pro Glu Thr Thr Pro Ser
10895 10900 10905

Met Ala Thr Ser His Gly Glu Glu Ala Ser Ser Ala Ile Pro Thr

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    10910                10915                10920

Pro Thr   Val Ser Pro Gly Val   Pro Gly Val Val Thr   Ser Leu Val
    10925                10930                10935

Thr Ser   Ser Arg Ala Val Thr   Ser Thr Thr Ile Pro   Ile Leu Thr
    10940                10945                10950

Phe Ser   Leu Gly Glu Pro Glu   Thr Thr Pro Ser Met   Ala Thr Ser
    10955                10960                10965

His Gly   Thr Glu Ala Gly Ser   Ala Val Pro Thr Val   Leu Pro Glu
    10970                10975                10980

Val Pro   Gly Met Val Thr Ser   Leu Val Ala Ser Ser   Arg Ala Val
    10985                10990                10995

Thr Ser   Thr Thr Leu Pro Thr   Leu Thr Leu Ser Pro   Gly Glu Pro
    11000                11005                11010

Glu Thr   Thr Pro Ser Met Ala   Thr Ser His Gly Ala   Glu Ala Ser
    11015                11020                11025

Ser Thr   Val Pro Thr Val Ser   Pro Glu Val Pro Gly   Val Val Thr
    11030                11035                11040

Ser Leu   Val Thr Ser Ser Ser   Gly Val Asn Ser Thr   Ser Ile Pro
    11045                11050                11055

Thr Leu   Ile Leu Ser Pro Gly   Glu Leu Glu Thr Thr   Pro Ser Met
    11060                11065                11070

Ala Thr   Ser His Gly Ala Glu   Ala Ser Ser Ala Val   Pro Thr Pro
    11075                11080                11085

Thr Val   Ser Pro Gly Val Ser   Gly Val Val Thr Pro   Leu Val Thr
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11090 11095 11100

Ser Ser Arg Ala Val Thr Ser Thr Thr Ile Pro Ile Leu Thr Leu
11105 11110 11115

Ser Ser Ser Glu Pro Glu Thr Thr Pro Ser Met Ala Thr Ser His
11120 11125 11130

Gly Val Glu Ala Ser Ser Ala Val Leu Thr Val Ser Pro Glu Val
11135 11140 11145

Pro Gly Met Val Thr Ser Leu Val Thr Ser Ser Arg Ala Val Thr
11150 11155 11160

Ser Thr Thr Ile Pro Thr Leu Thr Ile Ser Ser Asp Glu Pro Glu
11165 11170 11175

Thr Thr Thr Ser Leu Val Thr His Ser Glu Ala Lys Met Ile Ser
11180 11185 11190

Ala Ile Pro Thr Leu Ala Val Ser Pro Thr Val Gln Gly Leu Val
11195 11200 11205

Thr Ser Leu Val Thr Ser Ser Gly Ser Glu Thr Ser Ala Phe Ser
11210 11215 11220

Asn Leu Thr Val Ala Ser Ser Gln Pro Glu Thr Ile Asp Ser Trp
11225 11230 11235

Val Ala His Pro Gly Thr Glu Ala Ser Ser Val Val Pro Thr Leu
11240 11245 11250

Thr Val Ser Thr Gly Glu Pro Phe Thr Asn Ile Ser Leu Val Thr
11255 11260 11265

His Pro Ala Glu Ser Ser Ser Thr Leu Pro Arg Thr Thr Ser Arg

11270 11275 11280

Phe Ser His Ser Glu Leu Asp Thr Met Pro Ser Thr Val Thr Ser
11285 11290 11295

Pro Glu Ala Glu Ser Ser Ser Ala Ile Ser Thr Thr Ile Ser Pro
11300 11305 11310

Gly Ile Pro Gly Val Leu Thr Ser Leu Val Thr Ser Ser Gly Arg
11315 11320 11325

Asp Ile Ser Ala Thr Phe Pro Thr Val Pro Glu Ser Pro His Glu
11330 11335 11340

Ser Glu Ala Thr Ala Ser Trp Val Thr His Pro Ala Val Thr Ser
11345 11350 11355

Thr Thr Val Pro Arg Thr Thr Pro Asn Tyr Ser His Ser Glu Pro
11360 11365 11370

Asp Thr Thr Pro Ser Ile Ala Thr Ser Pro Gly Ala Glu Ala Thr
11375 11380 11385

Ser Asp Phe Pro Thr Ile Thr Val Ser Pro Asp Val Pro Asp Met
11390 11395 11400

Val Thr Ser Gln Val Thr Ser Ser Gly Thr Asp Thr Ser Ile Thr
11405 11410 11415

Ile Pro Thr Leu Thr Leu Ser Ser Gly Glu Pro Glu Thr Thr Thr
11420 11425 11430

Ser Phe Ile Thr Tyr Ser Glu Thr His Thr Ser Ser Ala Ile Pro
11435 11440 11445

Thr Leu Pro Val Ser Pro Gly Ala Ser Lys Met Leu Thr Ser Leu

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    11450                11455                11460

Val Ile   Ser Ser Gly Thr Asp   Ser Thr Thr Thr Phe   Pro Thr Leu
    11465                11470                11475

Thr Glu   Thr Pro Tyr Glu Pro   Glu Thr Thr Ala Ile   Gln Leu Ile
    11480                11485                11490

His Pro   Ala Glu Thr Asn Thr   Met Val Pro Arg Thr   Thr Pro Lys
    11495                11500                11505

Phe Ser   His Ser Lys Ser Asp   Thr Thr Leu Pro Val   Ala Ile Thr
    11510                11515                11520

Ser Pro   Gly Pro Glu Ala Ser   Ser Ala Val Ser Thr   Thr Thr Ile
    11525                11530                11535

Ser Pro   Asp Met Ser Asp Leu   Val Thr Ser Leu Val   Pro Ser Ser
    11540                11545                11550

Gly Thr   Asp Thr Ser Thr Thr   Phe Pro Thr Leu Ser   Glu Thr Pro
    11555                11560                11565

Tyr Glu   Pro Glu Thr Thr Ala   Thr Trp Leu Thr His   Pro Ala Glu
    11570                11575                11580

Thr Ser   Thr Thr Val Ser Gly   Thr Ile Pro Asn Phe   Ser His Arg
    11585                11590                11595

Gly Ser   Asp Thr Ala Pro Ser   Met Val Thr Ser Pro   Gly Val Asp
    11600                11605                11610

Thr Arg   Ser Gly Val Pro Thr   Thr Thr Ile Pro Pro   Ser Ile Pro
    11615                11620                11625

Gly Val   Val Thr Ser Gln Val   Thr Ser Ser Ala Thr   Asp Thr Ser
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    11630                11635                11640

Thr Ala   Ile Pro Thr Leu Thr   Pro Ser Pro Gly Glu   Pro Glu Thr
    11645                11650                11655

Thr Ala   Ser Ser Ala Thr His   Pro Gly Thr Gln Thr   Gly Phe Thr
    11660                11665                11670

Val Pro   Ile Arg Thr Val Pro   Ser Ser Glu Pro Asp   Thr Met Ala
    11675                11680                11685

Ser Trp   Val Thr His Pro Pro   Gln Thr Ser Thr Pro   Val Ser Arg
    11690                11695                11700

Thr Thr   Ser Ser Phe Ser His   Ser Ser Pro Asp Ala   Thr Pro Val
    11705                11710                11715

Met Ala   Thr Ser Pro Arg Thr   Glu Ala Ser Ser Ala   Val Leu Thr
    11720                11725                11730

Thr Ile   Ser Pro Gly Ala Pro   Glu Met Val Thr Ser   Gln Ile Thr
    11735                11740                11745

Ser Ser   Gly Ala Ala Thr Ser   Thr Thr Val Pro Thr   Leu Thr His
    11750                11755                11760

Ser Pro   Gly Met Pro Glu Thr   Thr Ala Leu Leu Ser   Thr His Pro
    11765                11770                11775

Arg Thr   Glu Thr Ser Lys Thr   Phe Pro Ala Ser Thr   Val Phe Pro
    11780                11785                11790

Gln Val   Ser Glu Thr Thr Ala   Ser Leu Thr Ile Arg   Pro Gly Ala
    11795                11800                11805

Glu Thr   Ser Thr Ala Leu Pro   Thr Gln Thr Thr Ser   Ser Leu Phe
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11810 11815 11820

Thr Leu Leu Val Thr Gly Thr Ser Arg Val Asp Leu Ser Pro Thr
11825 11830 11835

Ala Ser Pro Gly Val Ser Ala Lys Thr Ala Pro Leu Ser Thr His
11840 11845 11850

Pro Gly Thr Glu Thr Ser Thr Met Ile Pro Thr Ser Thr Leu Ser
11855 11860 11865

Leu Gly Leu Leu Glu Thr Thr Gly Leu Leu Ala Thr Ser Ser Ser
11870 11875 11880

Ala Glu Thr Ser Thr Ser Thr Leu Thr Leu Thr Val Ser Pro Ala
11885 11890 11895

Val Ser Gly Leu Ser Ser Ala Ser Ile Thr Thr Asp Lys Pro Gln
11900 11905 11910

Thr Val Thr Ser Trp Asn Thr Glu Thr Ser Pro Ser Val Thr Ser
11915 11920 11925

Val Gly Pro Pro Glu Phe Ser Arg Thr Val Thr Gly Thr Thr Met
11930 11935 11940

Thr Leu Ile Pro Ser Glu Met Pro Thr Pro Pro Lys Thr Ser His
11945 11950 11955

Gly Glu Gly Val Ser Pro Thr Thr Ile Leu Arg Thr Thr Met Val
11960 11965 11970

Glu Ala Thr Asn Leu Ala Thr Thr Gly Ser Ser Pro Thr Val Ala
11975 11980 11985

Lys Thr Thr Thr Thr Phe Asn Thr Leu Ala Gly Ser Leu Phe Thr

11990 11995 12000

Pro Leu Thr Thr Pro Gly Met Ser Thr Leu Ala Ser Glu Ser Val
12005 12010 12015

Thr Ser Arg Thr Ser Tyr Asn His Arg Ser Trp Ile Ser Thr Thr
12020 12025 12030

Ser Ser Tyr Asn Arg Arg Tyr Trp Thr Pro Ala Thr Ser Thr Pro
12035 12040 12045

Val Thr Ser Thr Phe Ser Pro Gly Ile Ser Thr Ser Ser Ile Pro
12050 12055 12060

Ser Ser Thr Ala Ala Thr Val Pro Phe Met Val Pro Phe Thr Leu
12065 12070 12075

Asn Phe Thr Ile Thr Asn Leu Gln Tyr Glu Glu Asp Met Arg His
12080 12085 12090

Pro Gly Ser Arg Lys Phe Asn Ala Thr Glu Arg Glu Leu Gln Gly
12095 12100 12105

Leu Leu Lys Pro Leu Phe Arg Asn Ser Ser Leu Glu Tyr Leu Tyr
12110 12115 12120

Ser Gly Cys Arg Leu Ala Ser Leu Arg Pro Glu Lys Asp Ser Ser
12125 12130 12135

Ala Thr Ala Val Asp Ala Ile Cys Thr His Arg Pro Asp Pro Glu
12140 12145 12150

Asp Leu Gly Leu Asp Arg Glu Arg Leu Tyr Trp Glu Leu Ser Asn
12155 12160 12165

Leu Thr Asn Gly Ile Gln Glu Leu Gly Pro Tyr Thr Leu Asp Arg

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    12170                12175                12180

Asn Ser   Leu Tyr Val Asn Gly   Phe Thr His Arg Ser   Ser Met Pro
    12185                12190                12195

Thr Thr   Ser Thr Pro Gly Thr   Ser Thr Val Asp Val   Gly Thr Ser
    12200                12205                12210

Gly Thr   Pro Ser Ser Ser Pro   Ser Pro Thr Thr Ala   Gly Pro Leu
    12215                12220                12225

Leu Met   Pro Phe Thr Leu Asn   Phe Thr Ile Thr Asn   Leu Gln Tyr
    12230                12235                12240

Glu Glu   Asp Met Arg Arg Thr   Gly Ser Arg Lys Phe   Asn Thr Met
    12245                12250                12255

Glu Ser   Val Leu Gln Gly Leu   Leu Lys Pro Leu Phe   Lys Asn Thr
    12260                12265                12270

Ser Val   Gly Pro Leu Tyr Ser   Gly Cys Arg Leu Thr   Leu Leu Arg
    12275                12280                12285

Pro Glu   Lys Asp Gly Ala Ala   Thr Gly Val Asp Ala   Ile Cys Thr
    12290                12295                12300

His Arg   Leu Asp Pro Lys Ser   Pro Gly Leu Asn Arg   Glu Gln Leu
    12305                12310                12315

Tyr Trp   Glu Leu Ser Lys Leu   Thr Asn Asp Ile Glu   Glu Leu Gly
    12320                12325                12330

Pro Tyr   Thr Leu Asp Arg Asn   Ser Leu Tyr Val Asn   Gly Phe Thr
    12335                12340                12345

His Gln   Ser Ser Val Ser Thr   Thr Ser Thr Pro Gly   Thr Ser Thr
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12350 12355 12360

Val Asp Leu Arg Thr Ser Gly Thr Pro Ser Ser Leu Ser Ser Pro
12365 12370 12375

Thr Ile Met Ala Ala Gly Pro Leu Leu Val Pro Phe Thr Leu Asn
12380 12385 12390

Phe Thr Ile Thr Asn Leu Gln Tyr Gly Glu Asp Met Gly His Pro
12395 12400 12405

Gly Ser Arg Lys Phe Asn Thr Thr Glu Arg Val Leu Gln Gly Leu
12410 12415 12420

Leu Gly Pro Ile Phe Lys Asn Thr Ser Val Gly Pro Leu Tyr Ser
12425 12430 12435

Gly Cys Arg Leu Thr Ser Leu Arg Ser Glu Lys Asp Gly Ala Ala
12440 12445 12450

Thr Gly Val Asp Ala Ile Cys Ile His His Leu Asp Pro Lys Ser
12455 12460 12465

Pro Gly Leu Asn Arg Glu Arg Leu Tyr Trp Glu Leu Ser Gln Leu
12470 12475 12480

Thr Asn Gly Ile Lys Glu Leu Gly Pro Tyr Thr Leu Asp Arg Asn
12485 12490 12495

Ser Leu Tyr Val Asn Gly Phe Thr His Arg Thr Ser Val Pro Thr
12500 12505 12510

Ser Ser Thr Pro Gly Thr Ser Thr Val Asp Leu Gly Thr Ser Gly
12515 12520 12525

Thr Pro Phe Ser Leu Pro Ser Pro Ala Thr Ala Gly Pro Leu Leu

12530 12535 12540

Val Leu Phe Thr Leu Asn Phe Thr Ile Thr Asn Leu Lys Tyr Glu
12545 12550 12555

Glu Asp Met His Arg Pro Gly Ser Arg Lys Phe Asn Thr Thr Glu
12560 12565 12570

Arg Val Leu Gln Thr Leu Leu Gly Pro Met Phe Lys Asn Thr Ser
12575 12580 12585

Val Gly Leu Leu Tyr Ser Gly Cys Arg Leu Thr Leu Leu Arg Ser
12590 12595 12600

Glu Lys Asp Gly Ala Ala Thr Gly Val Asp Ala Ile Cys Thr His
12605 12610 12615

Arg Leu Asp Pro Lys Ser Pro Gly Val Asp Arg Glu Gln Leu Tyr
12620 12625 12630

Trp Glu Leu Ser Gln Leu Thr Asn Gly Ile Lys Glu Leu Gly Pro
12635 12640 12645

Tyr Thr Leu Asp Arg Asn Ser Leu Tyr Val Asn Gly Phe Thr His
12650 12655 12660

Trp Ile Pro Val Pro Thr Ser Ser Thr Pro Gly Thr Ser Thr Val
12665 12670 12675

Asp Leu Gly Ser Gly Thr Pro Ser Ser Leu Pro Ser Pro Thr Thr
12680 12685 12690

Ala Gly Pro Leu Leu Val Pro Phe Thr Leu Asn Phe Thr Ile Thr
12695 12700 12705

Asn Leu Lys Tyr Glu Glu Asp Met His Cys Pro Gly Ser Arg Lys

12710 12715 12720

Phe Asn Thr Thr Glu Arg Val Leu Gln Ser Leu Leu Gly Pro Met
12725 12730 12735

Phe Lys Asn Thr Ser Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu
12740 12745 12750

Thr Leu Leu Arg Ser Glu Lys Asp Gly Ala Ala Thr Gly Val Asp
12755 12760 12765

Ala Ile Cys Thr His Arg Leu Asp Pro Lys Ser Pro Gly Val Asp
12770 12775 12780

Arg Glu Gln Leu Tyr Trp Glu Leu Ser Gln Leu Thr Asn Gly Ile
12785 12790 12795

Lys Glu Leu Gly Pro Tyr Thr Leu Asp Arg Asn Ser Leu Tyr Val
12800 12805 12810

Asn Gly Phe Thr His Gln Thr Ser Ala Pro Asn Thr Ser Thr Pro
12815 12820 12825

Gly Thr Ser Thr Val Asp Leu Gly Thr Ser Gly Thr Pro Ser Ser
12830 12835 12840

Leu Pro Ser Pro Thr Ser Ala Gly Pro Leu Leu Val Pro Phe Thr
12845 12850 12855

Leu Asn Phe Thr Ile Thr Asn Leu Gln Tyr Glu Glu Asp Met His
12860 12865 12870

His Pro Gly Ser Arg Lys Phe Asn Thr Thr Glu Arg Val Leu Gln
12875 12880 12885

Gly Leu Leu Gly Pro Met Phe Lys Asn Thr Ser Val Gly Leu Leu

12890 12895 12900

Tyr Ser Gly Cys Arg Leu Thr Leu Leu Arg Pro Glu Lys Asn Gly
12905 12910 12915

Ala Ala Thr Gly Met Asp Ala Ile Cys Ser His Arg Leu Asp Pro
12920 12925 12930

Lys Ser Pro Gly Leu Asn Arg Glu Gln Leu Tyr Trp Glu Leu Ser
12935 12940 12945

Gln Leu Thr His Gly Ile Lys Glu Leu Gly Pro Tyr Thr Leu Asp
12950 12955 12960

Arg Asn Ser Leu Tyr Val Asn Gly Phe Thr His Arg Ser Ser Val
12965 12970 12975

Ala Pro Thr Ser Thr Pro Gly Thr Ser Thr Val Asp Leu Gly Thr
12980 12985 12990

Ser Gly Thr Pro Ser Ser Leu Pro Ser Pro Thr Thr Ala Val Pro
12995 13000 13005

Leu Leu Val Pro Phe Thr Leu Asn Phe Thr Ile Thr Asn Leu Gln
13010 13015 13020

Tyr Gly Glu Asp Met Arg His Pro Gly Ser Arg Lys Phe Asn Thr
13025 13030 13035

Thr Glu Arg Val Leu Gln Gly Leu Leu Gly Pro Leu Phe Lys Asn
13040 13045 13050

Ser Ser Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu Ile Ser Leu
13055 13060 13065

Arg Ser Glu Lys Asp Gly Ala Ala Thr Gly Val Asp Ala Ile Cys

13070 13075 13080

Thr His His Leu Asn Pro Gln Ser Pro Gly Leu Asp Arg Glu Gln
13085 13090 13095

Leu Tyr Trp Gln Leu Ser Gln Met Thr Asn Gly Ile Lys Glu Leu
13100 13105 13110

Gly Pro Tyr Thr Leu Asp Arg Asn Ser Leu Tyr Val Asn Gly Phe
13115 13120 13125

Thr His Arg Ser Ser Gly Leu Thr Thr Ser Thr Pro Trp Thr Ser
13130 13135 13140

Thr Val Asp Leu Gly Thr Ser Gly Thr Pro Ser Pro Val Pro Ser
13145 13150 13155

Pro Thr Thr Thr Gly Pro Leu Leu Val Pro Phe Thr Leu Asn Phe
13160 13165 13170

Thr Ile Thr Asn Leu Gln Tyr Glu Glu Asn Met Gly His Pro Gly
13175 13180 13185

Ser Arg Lys Phe Asn Ile Thr Glu Ser Val Leu Gln Gly Leu Leu
13190 13195 13200

Lys Pro Leu Phe Lys Ser Thr Ser Val Gly Pro Leu Tyr Ser Gly
13205 13210 13215

Cys Arg Leu Thr Leu Leu Arg Pro Glu Lys Asp Gly Val Ala Thr
13220 13225 13230

Arg Val Asp Ala Ile Cys Thr His Arg Pro Asp Pro Lys Ile Pro
13235 13240 13245

Gly Leu Asp Arg Gln Gln Leu Tyr Trp Glu Leu Ser Gln Leu Thr

13250 13255 13260

His Ser Ile Thr Glu Leu Gly Pro Tyr Thr Leu Asp Arg Asp Ser
13265 13270 13275

Leu Tyr Val Asn Gly Phe Thr Gln Arg Ser Ser Val Pro Thr Thr
13280 13285 13290

Ser Thr Pro Gly Thr Phe Thr Val Gln Pro Glu Thr Ser Glu Thr
13295 13300 13305

Pro Ser Ser Leu Pro Gly Pro Thr Ala Thr Gly Pro Val Leu Leu
13310 13315 13320

Pro Phe Thr Leu Asn Phe Thr Ile Thr Asn Leu Gln Tyr Glu Glu
13325 13330 13335

Asp Met Arg Arg Pro Gly Ser Arg Lys Phe Asn Thr Thr Glu Arg
13340 13345 13350

Val Leu Gln Gly Leu Leu Met Pro Leu Phe Lys Asn Thr Ser Val
13355 13360 13365

Ser Ser Leu Tyr Ser Gly Cys Arg Leu Thr Leu Leu Arg Pro Glu
13370 13375 13380

Lys Asp Gly Ala Ala Thr Arg Val Asp Ala Val Cys Thr His Arg
13385 13390 13395

Pro Asp Pro Lys Ser Pro Gly Leu Asp Arg Glu Arg Leu Tyr Trp
13400 13405 13410

Lys Leu Ser Gln Leu Thr His Gly Ile Thr Glu Leu Gly Pro Tyr
13415 13420 13425

Thr Leu Asp Arg His Ser Leu Tyr Val Asn Gly Phe Thr His Gln

13430 13435 13440

Ser Ser Met Thr Thr Thr Arg Thr Pro Asp Thr Ser Thr Met His
13445 13450 13455

Leu Ala Thr Ser Arg Thr Pro Ala Ser Leu Ser Gly Pro Met Thr
13460 13465 13470

Ala Ser Pro Leu Leu Val Leu Phe Thr Ile Asn Phe Thr Ile Thr
13475 13480 13485

Asn Leu Arg Tyr Glu Glu Asn Met His His Pro Gly Ser Arg Lys
13490 13495 13500

Phe Asn Thr Thr Glu Arg Val Leu Gln Gly Leu Leu Arg Pro Val
13505 13510 13515

Phe Lys Asn Thr Ser Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu
13520 13525 13530

Thr Leu Leu Arg Pro Lys Lys Asp Gly Ala Ala Thr Lys Val Asp
13535 13540 13545

Ala Ile Cys Thr Tyr Arg Pro Asp Pro Lys Ser Pro Gly Leu Asp
13550 13555 13560

Arg Glu Gln Leu Tyr Trp Glu Leu Ser Gln Leu Thr His Ser Ile
13565 13570 13575

Thr Glu Leu Gly Pro Tyr Thr Leu Asp Arg Asp Ser Leu Tyr Val
13580 13585 13590

Asn Gly Phe Thr Gln Arg Ser Ser Val Pro Thr Thr Ser Ile Pro
13595 13600 13605

Gly Thr Pro Thr Val Asp Leu Gly Thr Ser Gly Thr Pro Val Ser

13610 13615 13620

Lys Pro Gly Pro Ser Ala Ala Ser Pro Leu Leu Val Leu Phe Thr

13625 13630 13635

Leu Asn Phe Thr Ile Thr Asn Leu Arg Tyr Glu Glu Asn Met Gln

13640 13645 13650

His Pro Gly Ser Arg Lys Phe Asn Thr Thr Glu Arg Val Leu Gln

13655 13660 13665

Gly Leu Leu Arg Ser Leu Phe Lys Ser Thr Ser Val Gly Pro Leu

13670 13675 13680

Tyr Ser Gly Cys Arg Leu Thr Leu Leu Arg Pro Glu Lys Asp Gly

13685 13690 13695

Thr Ala Thr Gly Val Asp Ala Ile Cys Thr His His Pro Asp Pro

13700 13705 13710

Lys Ser Pro Arg Leu Asp Arg Glu Gln Leu Tyr Trp Glu Leu Ser

13715 13720 13725

Gln Leu Thr His Asn Ile Thr Glu Leu Gly Pro Tyr Ala Leu Asp

13730 13735 13740

Asn Asp Ser Leu Phe Val Asn Gly Phe Thr His Arg Ser Ser Val

13745 13750 13755

Ser Thr Thr Ser Thr Pro Gly Thr Pro Thr Val Tyr Leu Gly Ala

13760 13765 13770

Ser Lys Thr Pro Ala Ser Ile Phe Gly Pro Ser Ala Ala Ser His

13775 13780 13785

Leu Leu Ile Leu Phe Thr Leu Asn Phe Thr Ile Thr Asn Leu Arg

13790 13795 13800

Tyr Glu Glu Asn Met Trp Pro Gly Ser Arg Lys Phe Asn Thr Thr
13805 13810 13815

Glu Arg Val Leu Gln Gly Leu Leu Arg Pro Leu Phe Lys Asn Thr
13820 13825 13830

Ser Val Gly Pro Leu Tyr Ser Gly Cys Arg Leu Thr Leu Leu Arg
13835 13840 13845

Pro Glu Lys Asp Gly Glu Ala Thr Gly Val Asp Ala Ile Cys Thr
13850 13855 13860

His Arg Pro Asp Pro Thr Gly Pro Gly Leu Asp Arg Glu Gln Leu
13865 13870 13875

Tyr Leu Glu Leu Ser Gln Leu Thr His Ser Ile Thr Glu Leu Gly
13880 13885 13890

Pro Tyr Thr Leu Asp Arg Asp Ser Leu Tyr Val Asn Gly Phe Thr
13895 13900 13905

His Arg Ser Ser Val Pro Thr Thr Ser Thr Gly Val Val Ser Glu
13910 13915 13920

Glu Pro Phe Thr Leu Asn Phe Thr Ile Asn Asn Leu Arg Tyr Met
13925 13930 13935

Ala Asp Met Gly Gln Pro Gly Ser Leu Lys Phe Asn Ile Thr Asp
13940 13945 13950

Asn Val Met Gln His Leu Leu Ser Pro Leu Phe Gln Arg Ser Ser
13955 13960 13965

Leu Gly Ala Arg Tyr Thr Gly Cys Arg Val Ile Ala Leu Arg Ser

13970 13975 13980

Val Lys Asn Gly Ala Glu Thr Arg Val Asp Leu Leu Cys Thr Tyr
13985 13990 13995

Leu Gln Pro Leu Ser Gly Pro Gly Leu Pro Ile Lys Gln Val Phe
14000 14005 14010

His Glu Leu Ser Gln Gln Thr His Gly Ile Thr Arg Leu Gly Pro
14015 14020 14025

Tyr Ser Leu Asp Lys Asp Ser Leu Tyr Leu Asn Gly Tyr Asn Glu
14030 14035 14040

Pro Gly Pro Asp Glu Pro Pro Thr Thr Pro Lys Pro Ala Thr Thr
14045 14050 14055

Phe Leu Pro Pro Leu Ser Glu Ala Thr Thr Ala Met Gly Tyr His
14060 14065 14070

Leu Lys Thr Leu Thr Leu Asn Phe Thr Ile Ser Asn Leu Gln Tyr
14075 14080 14085

Ser Pro Asp Met Gly Lys Gly Ser Ala Thr Phe Asn Ser Thr Glu
14090 14095 14100

Gly Val Leu Gln His Leu Leu Arg Pro Leu Phe Gln Lys Ser Ser
14105 14110 14115

Met Gly Pro Phe Tyr Leu Gly Cys Gln Leu Ile Ser Leu Arg Pro
14120 14125 14130

Glu Lys Asp Gly Ala Ala Thr Gly Val Asp Thr Thr Cys Thr Tyr
14135 14140 14145

His Pro Asp Pro Val Gly Pro Gly Leu Asp Ile Gln Gln Leu Tyr

14150 14155 14160

Trp Glu Leu Ser Gln Leu Thr His Gly Val Thr Gln Leu Gly Phe
14165 14170 14175

Tyr Val Leu Asp Arg Asp Ser Leu Phe Ile Asn Gly Tyr Ala Pro
14180 14185 14190

Gln Asn Leu Ser Ile Arg Gly Glu Tyr Gln Ile Asn Phe His Ile
14195 14200 14205

Val Asn Trp Asn Leu Ser Asn Pro Asp Pro Thr Ser Ser Glu Tyr
14210 14215 14220

Ile Thr Leu Leu Arg Asp Ile Gln Asp Lys Val Thr Thr Leu Tyr
14225 14230 14235

Lys Gly Ser Gln Leu His Asp Thr Phe Arg Phe Cys Leu Val Thr
14240 14245 14250

Asn Leu Thr Met Asp Ser Val Leu Val Thr Val Lys Ala Leu Phe
14255 14260 14265

Ser Ser Asn Leu Asp Pro Ser Leu Val Glu Gln Val Phe Leu Asp
14270 14275 14280

Lys Thr Leu Asn Ala Ser Phe His Trp Leu Gly Ser Thr Tyr Gln
14285 14290 14295

Leu Val Asp Ile His Val Thr Glu Met Glu Ser Ser Val Tyr Gln
14300 14305 14310

Pro Thr Ser Ser Ser Ser Thr Gln His Phe Tyr Leu Asn Phe Thr
14315 14320 14325

Ile Thr Asn Leu Pro Tyr Ser Gln Asp Lys Ala Gln Pro Gly Thr

14330 14335 14340

Thr Asn Tyr Gln Arg Asn Lys Arg Asn Ile Glu Asp Ala Leu Asn
14345 14350 14355

Gln Leu Phe Arg Asn Ser Ser Ile Lys Ser Tyr Phe Ser Asp Cys
14360 14365 14370

Gln Val Ser Thr Phe Arg Ser Val Pro Asn Arg His His Thr Gly
14375 14380 14385

Val Asp Ser Leu Cys Asn Phe Ser Pro Leu Ala Arg Arg Val Asp
14390 14395 14400

Arg Val Ala Ile Tyr Glu Glu Phe Leu Arg Met Thr Arg Asn Gly
14405 14410 14415

Thr Gln Leu Gln Asn Phe Thr Leu Asp Arg Ser Ser Val Leu Val
14420 14425 14430

Asp Gly Tyr Ser Pro Asn Arg Asn Glu Pro Leu Thr Gly Asn Ser
14435 14440 14445

Asp Leu Pro Phe Trp Ala Val Ile Leu Ile Gly Leu Ala Gly Leu
14450 14455 14460

Leu Gly Val Ile Thr Cys Leu Ile Cys Gly Val Leu Val Thr Thr
14465 14470 14475

Arg Arg Arg Lys Lys Glu Gly Glu Tyr Asn Val Gln Gln Gln Cys
14480 14485 14490

Pro Gly Tyr Tyr Gln Ser His Leu Asp Leu Glu Asp Leu Gln
14495 14500 14505

<210> 174

<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 174

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser
20 25

<210> 175
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 175

Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser
1 5 10 15

Gly

<210> 176
<211> 38
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 176

Gly Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn
1 5 10 15

Ala Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
            20   25   30

Thr Ala Leu Tyr Tyr Cys
        35

<210> 177
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 177

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
1   5   10

<210> 178
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> VARIANT
<222> (8)..(8)
<223> Xaa = Ala or Ser

<400> 178

Gly Phe Thr Phe Asp Asp Tyr Xaa
1   5

<210> 179
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> VARIANT
<222> (8)..(8)
<223> Xaa = Lys or Ile

<400> 179

Ile Ser Trp Asn Ser Gly Ser Xaa
1 5

<210> 180
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<220>
<221> VARIANT
<222> (3)..(3)
<223> Xaa = Tyr or Asp

<220>
<221> VARIANT
<222> (12)..(12)
<223> Xaa = Tyr or His

<220>
<221> VARIANT
<222> (15)..(15)
<223> Xaa = Met or Leu

<220>
<221> VARIANT
<222> (15)..(15)
<223> Xaa = Met or Leu

<400> 180

Ala Lys Xaa Gly Ser Gly Tyr Gly Lys Phe Tyr Xaa Tyr Gly Xaa Asp
1 5 10 15

Val

<210> 181
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 181

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly 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 Leu Tyr Tyr Cys
85 90 95

Ala Lys Asp Gly Tyr Ser Gly Tyr Gly Tyr Phe 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> 182
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 182

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1 5 10 15

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
100 105 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
115 120 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
130 135 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145 150 155 160

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Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195                 200                 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225                 230                 235                 240

Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305                 310                 315                 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325                 330
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<210> 183
<211> 330

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 183

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Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1               5                   10                  15


Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30


Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45


Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60


Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65                  70                  75                  80


Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95


Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100                 105                 110


Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
        115                 120                 125


Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
    130                 135                 140


Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145                 150                 155                 160
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Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195                 200                 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225                 230                 235                 240

Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr
305                 310                 315                 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325                 330
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<210> 184
<211> 326
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 184

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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
```

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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

Ser Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
            260                 265                 270

Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
        275                 280                 285

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
    290                 295                 300

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
305                 310                 315                 320

Ser Leu Ser Pro Gly Lys
                325
```

<210> 185
<211> 326
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 185

```
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


Ser Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
            260                 265                 270


Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
        275                 280                 285


Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
    290                 295                 300


Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys Ser Leu
305                 310                 315                 320


Ser Leu Ser Pro Gly Lys
                325
```

<210> 186
<211> 327
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 186

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
1               5                  10                  15

Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65                  70                  75                  80

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95

Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro
            100                 105                 110

Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
        115                 120                 125

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
    130                 135                 140

Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
145                 150                 155                 160

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
                165                 170                 175

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            180                 185                 190
```

```
Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
        195                 200                 205

Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    210                 215                 220

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
225                 230                 235                 240

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                245                 250                 255

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            260                 265                 270

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        275                 280                 285

Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
    290                 295                 300

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
305                 310                 315                 320

Leu Ser Leu Ser Leu Gly Lys
                325
```

<210> 187
<211> 327
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 187

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
1               5                  10                  15

Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65                  70                  75                  80

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95

Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro
            100                 105                 110

Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
        115                 120                 125

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
    130                 135                 140

Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
145                 150                 155                 160

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
                165                 170                 175

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            180                 185                 190
```

```
Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
        195                 200                 205


Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    210                 215                 220


Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
225                 230                 235                 240


Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                245                 250                 255


Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            260                 265                 270


Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        275                 280                 285


Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
    290                 295                 300


Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys Ser
305                 310                 315                 320


Leu Ser Leu Ser Leu Gly Lys
                325


<210>  188
<211>  329
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  synthetic

<400>  188

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1               5                   10                  15
```

```
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65                  70                  75                  80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100                 105                 110

Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
        115                 120                 125

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
    130                 135                 140

Val Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr
145                 150                 155                 160

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
                165                 170                 175

Gln Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
            180                 185                 190

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
        195                 200                 205
```

```
Gly Leu Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
    210                 215                 220

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
225                 230                 235                 240

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
                245                 250                 255

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
            260                 265                 270

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
        275                 280                 285

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
    290                 295                 300

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
305                 310                 315                 320

Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325
```

<210> 189
<211> 329
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 189

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1               5                   10                  15
```

```
Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65                  70                  75                  80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100                 105                 110

Pro Ala Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
        115                 120                 125

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
    130                 135                 140

Val Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr
145                 150                 155                 160

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
                165                 170                 175

Gln Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
            180                 185                 190

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
        195                 200                 205
```

```
Gly Leu Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
    210                 215                 220

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
225                 230                 235                 240

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
                245                 250                 255

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
            260                 265                 270

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
        275                 280                 285

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
    290                 295                 300

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln
305                 310                 315                 320

Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325
```

<210> 190
<211> 326
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 190

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
1               5                   10                  15

Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
```

```
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65                  70                  75                  80

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95

Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro 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 Gln 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 Tyr Arg Val Val Ser Val Leu Thr Val Leu 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

Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
    210                 215                 220
```

```
Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn
225                 230                 235                 240


Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
                245                 250                 255


Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
            260                 265                 270


Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg
        275                 280                 285


Leu Thr Val Asp Lys Ser Arg Trp Gln Glu 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 Leu Gly Lys
                325


<210>  191
<211>  326
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  synthetic

<400>  191

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
1               5                   10                  15


Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
```

```
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr
65                  70                  75                  80

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95

Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro 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 Gln 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 Tyr Arg Val Val Ser Val Leu Thr Val Leu 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

Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
    210                 215                 220
```

```
Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn
225                 230                 235                 240


Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
                245                 250                 255


Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
            260                 265                 270


Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg
        275                 280                 285


Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys
    290                 295                 300


Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys Ser Leu
305                 310                 315                 320


Ser Leu Ser Leu Gly Lys
                325


<210>  192
<211>  232
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  synthetic

<400>  192

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1               5                   10                  15


Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
            20                  25                  30


Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
        35                  40                  45
```

```
Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
    50                  55                  60

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
65                  70                  75                  80

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
                85                  90                  95

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            100                 105                 110

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        115                 120                 125

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr
    130                 135                 140

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
145                 150                 155                 160

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
                165                 170                 175

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
            180                 185                 190

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
        195                 200                 205

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
    210                 215                 220

Ser Leu Ser Leu Ser Pro Gly Lys
225                 230
```

<210> 193
<211> 232
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 193

```
Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1               5                  10                  15


Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
            20                  25                  30


Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
        35                  40                  45


Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
    50                  55                  60


Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
65                  70                  75                  80


Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
                85                  90                  95


Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            100                 105                 110


Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        115                 120                 125


Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr
    130                 135                 140
```

```
Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
145                 150                 155                 160


Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
                165                 170                 175


Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
            180                 185                 190


Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
        195                 200                 205


Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys
    210                 215                 220


Ser Leu Ser Leu Ser Pro Gly Lys
225                 230


<210>  194
<211>  228
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  synthetic

<400>  194

Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val
1               5                   10                  15


Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
            20                  25                  30


Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
        35                  40                  45


His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu
    50                  55                  60
```

```
Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr
65                  70                  75                  80

Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn
                85                  90                  95

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro
            100                 105                 110

Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln
        115                 120                 125

Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
    130                 135                 140

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ser Val
145                 150                 155                 160

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
                165                 170                 175

Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
            180                 185                 190

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
        195                 200                 205

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
    210                 215                 220

Ser Pro Gly Lys
225
```

<210> 195
<211> 228

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 195

```
Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro Pro Val
1               5                  10                  15


Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
            20                  25                  30


Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
        35                  40                  45


His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu
    50                  55                  60


Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr
65                  70                  75                  80


Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp Leu Asn
                85                  90                  95


Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ala Pro
            100                 105                 110


Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln
        115                 120                 125


Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
    130                 135                 140


Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ser Val
145                 150                 155                 160
```

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
165 170 175

Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
180 185 190

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
195 200 205

Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys Ser Leu Ser Leu
210 215 220

Ser Pro Gly Lys
225

<210> 196
<211> 229
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 196

Glu Ser Lys Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro Glu Phe
1 5 10 15

Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
20 25 30

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
35 40 45

Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
50 55 60

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
65 70 75 80

```
Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
                85                  90                  95

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser
            100                 105                 110

Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
        115                 120                 125

Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln
    130                 135                 140

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
145                 150                 155                 160

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
                165                 170                 175

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu
            180                 185                 190

Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser
        195                 200                 205

Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys Ser Leu Ser
    210                 215                 220

Leu Ser Leu Gly Lys
225
```

<210> 197
<211> 229
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 197

```
Glu Ser Lys Tyr Gly Pro Pro Cys Pro Ser Cys Pro Ala Pro Glu Phe
1               5                  10                  15


Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
            20                  25                  30


Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
        35                  40                  45


Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
    50                  55                  60


Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
65                  70                  75                  80


Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
                85                  90                  95


Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser
            100                 105                 110


Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
        115                 120                 125


Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln
    130                 135                 140


Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
145                 150                 155                 160


Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
                165                 170                 175
```

```
Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu
            180                 185                 190


Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser
        195                 200                 205


Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
    210                 215                 220


Leu Ser Leu Gly Lys
225


<210>  198
<211>  231
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  synthetic

<400>  198

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1               5                   10                  15


Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
            20                  25                  30


Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
        35                  40                  45


Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
    50                  55                  60


Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
65                  70                  75                  80


Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
                85                  90                  95
```

```
Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
            100                 105                 110


Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
        115                 120                 125


Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys
    130                 135                 140


Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
145                 150                 155                 160


Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
                165                 170                 175


Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
            180                 185                 190


Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
        195                 200                 205


Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
    210                 215                 220


Leu Ser Leu Ser Pro Gly Lys
225                 230


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Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
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Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
            20                  25                  30

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
        35                  40                  45

Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
    50                  55                  60

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
65                  70                  75                  80

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
                85                  90                  95

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
            100                 105                 110

Pro Ser Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
        115                 120                 125

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys
    130                 135                 140

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
145                 150                 155                 160

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
                165                 170                 175

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
            180                 185                 190
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```
Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
        195                 200                 205


Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys Ser
    210                 215                 220


Leu Ser Leu Ser Pro Gly Lys
225                 230


<210>  200
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Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro Pro Val
1               5                   10                  15


Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
            20                  25                  30


Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
        35                  40                  45


Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu
    50                  55                  60


Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr
65                  70                  75                  80


Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
                85                  90                  95


Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser
            100                 105                 110
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Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
        115                 120                 125


Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val
    130                 135                 140


Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
145                 150                 155                 160


Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
                165                 170                 175


Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr
            180                 185                 190


Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val
        195                 200                 205


Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
    210                 215                 220


Ser Leu Gly Lys
225


<210>  201
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Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro Pro Val
1               5                   10                  15
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Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
            20                  25                  30

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
        35                  40                  45

Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu
    50                  55                  60

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr
65                  70                  75                  80

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
                85                  90                  95

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser
            100                 105                 110

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
        115                 120                 125

Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val
    130                 135                 140

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
145                 150                 155                 160

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
                165                 170                 175

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr
            180                 185                 190

Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val
        195                 200                 205
```

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Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys Ser Leu Ser Leu
    210                 215                 220


Ser Leu Gly Lys
225
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