SEQUENCE LISTING

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<120> HUMAN IL-23 ANTIGEN BINDING PROTEINS

<130> A-1529-WO-PCT

<140> to be assigned
<141> 2010-10-26

<150> 61/381,287
<151> 2010-09-09

<150> 61/254,982
<151> 2009-10-26

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<170> PatentIn version 3.5

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Tyr Asp Val His Trp Tyr Gln Gln Val Pro Gly Thr Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Gly Ser Gly Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
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Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Gly Ser Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

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85 90 95

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100 105 110

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Tyr Arg Ile Tyr Trp Tyr Gln Gln Lys Pro Gly Ser Pro Pro Gln Tyr
35 40 45

Leu Leu Arg Tyr Lys Ser Asp Ser Asp Lys Gln Gln Gly Ser Gly Val
50 55 60

Pro Ser Arg Phe Ser Gly Ser Lys Asp Ala Ser Ala Asn Ala Gly Ile
65 70 75 80

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85 90 95

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Val Asp Trp Tyr Gln Gln Arg Pro Gly Lys Gly Pro Arg Phe Val Met
35 40 45

Arg Val Gly Thr Gly Gly Ile Val Gly Ser Lys Gly Asp Gly Ile Pro
50 55 60

Asp Arg Phe Ser Val Leu Gly Ser Gly Leu Asn Arg Tyr Leu Thr Ile
65 70 75 80

Lys Asn Ile Gln Glu Glu Asp Glu Ser Asp Tyr His Cys Gly Ala Asp
85 90 95

His Gly Ser Gly Ser Asn Phe Val Tyr Val Phe Gly Thr Gly Thr Lys
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Val Thr Val Leu
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gatggcatcc ctgatcgctt ctcagtcttg ggctcaggcc tgaatcggta cctgaccatc 240

aagaatatcc aggaagagga tgagagtgac taccactgtg gggcagacca tggcagtggg 300

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20 25 30

Val Asp Trp Tyr Gln Gln Arg Pro Gly Lys Gly Pro Arg Phe Val Met
35 40 45

Arg Val Gly Thr Gly Gly Ile Val Gly Ser Lys Gly Glu Gly Ile Pro
50 55 60

Asp Arg Phe Ser Val Leu Gly Ser Gly Leu Asn Arg Tyr Leu Thr Ile
65 70 75 80

Lys Asn Ile Gln Glu Glu Asp Glu Ser Asp Tyr His Cys Gly Ala Asp

85 90 95

His Gly Ser Gly Asn Asn Phe Val Tyr Val Phe Gly Thr Gly Thr Lys
100 105 110

Val Thr Val Leu
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gaaggcatcc ctgatcgctt ctcagtcttg ggctcaggcc tgaatcggta cctgaccatc 240

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20 25 30

Val Asp Trp Tyr Gln Leu Arg Pro Gly Lys Gly Pro Arg Phe Val Met
35 40 45

Arg Val Gly Thr Gly Gly Thr Val Gly Ser Lys Gly Glu Gly Ile Pro
50 55 60

Asp Arg Phe Ser Val Leu Gly Ser Gly Leu Asn Arg Ser Leu Thr Ile
65 70 75 80

Lys Asn Ile Gln Glu Glu Asp Glu Ser Asp Tyr His Cys Gly Ala Asp
85 90 95

His Gly Ser Gly Ser Asn Phe Val Tyr Val Phe Gly Thr Gly Thr Lys
100 105 110

Val Thr Val Leu
115

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gaaggcatcc ctgatcgctt ctcagtcttg ggctcaggcc tgaatcggtc cctgaccatc 240

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

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

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

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

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

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

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gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180

aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240

gaagattttg caacttacta ttgtcaacag gctgacagtt tccctcccac tttcggcgga 300

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<212> PRT
<213> Homo sapiens

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Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Val Ile Ser Ser Trp
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Ser 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 Val Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Phe Lys
100 105

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aggttcagcg gcagtgtatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240

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<213> Homo sapiens

<400> 17

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

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

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

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
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aggttcagcg gcagtggatc tgggacagac ttcactctca ccatcagcag cctgcagcct 240

gaagattttg caacttacta ttgtcaacag gctaacagtt tcccattcac tttcggccct 300

gggaccaaag tggatatcaa a 321

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<212> PRT
<213> Homo sapiens

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

Phe Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Asn 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

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Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Ser Phe Pro Phe
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Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
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gggcaagccc ctaacctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca      180

aggttcagcg gcagtggatc tgggacagaa ttcactctca ccatcagcag cctgcagcct      240

gaagattttg caacttacta ttgtcaacag gctaacagtt tcccattcac tttcggccct      300

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<213> Homo sapiens

<400> 21

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

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

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

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

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

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
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aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240

gacgattttg caacttacta ttgtcaacag gctaccagtt ttcccctcac tttcggcgga 300

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<213> Homo sapiens

<400> 23

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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Phe Ser Gly Trp
20 25 30

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

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

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

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gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240

gaagattttg caacttacta ctgtcaacag gctaacagtt tcccattcac tttcggccct 300

gggaccaaag tggatatcaa a 321

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<211> 107
<212> PRT
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20 25 30

Phe Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Asn 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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Val Lys
100 105

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gcagattttg caacttactt ttgtcaacag gctaacagtt tcccattcac tttcggccct 300

gggaccaaag tggatgtcaa a 321

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<212> PRT
<213> Homo sapiens

<400> 27

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
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            20                  25                  30

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

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

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
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<210> 28
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<213> Homo sapiens

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aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct      240

gaagattttg caacttacta ttgtcaacag gctaacagtt tcccattcac tttcggccct      300

gggaccaaag tggatatcaa a                                                321
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<213> Homo sapiens

<400> 29

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

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

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

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
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65 70 75 80

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

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Glu
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Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Xaa Xaa Ser Xaa
20 25 30

Trp Xaa Ala Trp Tyr Gln Gln Lys Pro Gly Xaa Ala Pro Xaa Leu Leu
35 40 45

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

Gly Ser Xaa Ser Gly Thr Xaa Phe Thr Leu Thr Ile Ser Ser Leu Gln
65 70 75 80

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

Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Xaa Lys
100 105

<210> 31
<211> 124
<212> PRT
<213> Homo sapiens

<400> 31

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

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

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

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Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Asp Arg Gly Tyr Thr Ser Ser Trp Tyr Pro Asp Ala Phe Asp
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Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
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<212> DNA
<213> Homo sapiens

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ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtaa tgaatactat 180

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<210> 33
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<212> PRT
<213> Homo sapiens

<400> 33

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

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

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
```

Ala Arg Asp Arg Gly Tyr Ser Ser Ser Trp Tyr Pro Asp Ala Phe Asp
100 105 110

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

<210> 34
<211> 121
<212> PRT
<213> Homo sapiens

<400> 34

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

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

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

Ala Val Ile Ser Phe Asp Gly Ser Leu Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Glu Arg Thr Thr Leu Ser Gly Ser Tyr Phe Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 35
<211> 363
<212> DNA
<213> Homo sapiens

<400> 35
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60

tcctgtgcag cctctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtt atatcatttg atggaagtct taaatactat 180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa caccctgtat 240

ctgcaaatga acagcctgag agctgaggac acggctgtgt attactgtgc gagagaacgg 300

actactttaa gtgggagcta ctttgactac tggggccagg gaaccctggt caccgtctcc 360

tca 363

<210> 36
<211> 121
<212> PRT
<213> Homo sapiens

<400> 36

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

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

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

Ser Val Ile Ser His Asp Gly Ser Ile Lys Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Glu Arg Thr Thr Leu Ser Gly Ser Tyr Phe Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 37
<211> 363
<212> DNA
<213> Homo sapiens

<400> 37
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60

tcctgtgcag cctctggatt caccttcagt agctatgcca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg gttgtcagtt atatcacatg atggaagtat taaatactat 180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240

ctgcaaatga acagcctgag agctgaggac acggctgtgt attactgtgc gagagaacgg 300

actactctaa gtgggagcta ctttgactac tggggccagg gaaccctggt caccgtctcc 360

tca 363

<210> 38
<211> 125
<212> PRT
<213> Homo sapiens

<400> 38

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

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

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

Ser Tyr Ile Ser Ser Arg Ser Ser Thr Ile Tyr Ile Ala Asp Ser Val
    50                  55                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Arg Ile Ala Ala Ala Gly Gly Phe His Tyr Tyr Tyr Ala Leu
            100                 105                 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125
```

<210> 39
<211> 375
<212> DNA
<213> Homo sapiens

<400> 39

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gaggtgcagc tggtggagtc tgggggaggc ctggtacagc ctgggggtc cctgagactc        60

tcctgtgcag cctctggatt caccttcagt agctatagta tgaactgggt ccgccaggct       120

ccagggaagg ggctggagtg ggtttcgtac attagtagta ggagtagtac catatacatc       180

gcagactctg tgaagggccg attcaccatc tccagagaca atgccaagaa ctcactgtat       240

ctgcaaatga acagcctgag agacgaagac acggctgtgt attactgtgc gagacggata       300

gcagcagctg gtgggttcca ctactactac gctttggacg tctggggcca agggaccacg       360

gtcaccgtct cctca                                                        375
```

<210> 40
<211> 125
<212> PRT
<213> Homo sapiens

<400> 40

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

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

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

Ser Tyr Ile Ser Ser Ser Ser Ser Thr Arg Tyr His Ala Asp Ser Val
    50                  55                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Arg Ile Ala Ala Ala Gly Pro Trp Gly Tyr Tyr Tyr Ala Met
            100                 105                 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125
```

<210> 41
<211> 375
<212> DNA
<213> Homo sapiens

<400> 41

```
gaggtgcagc tggtggagtc tgggggaggc ttggtacaac ctgggggtc cctgagactc       60

tcctgtgcag cctctggatt caccttcagt acctatagca tgaactgggt ccgccaggct      120

ccagggaagg ggctggagtg ggtttcatac attagtagca gtagtagtac cagataccac      180

gcagactctg tgaagggccg attcaccatc tccagagaca atgccaagaa ctcactgtat      240

ctgcaaatga acagcctgag agacgaggac acggctgtgt attactgtgc gagacgtata      300

gcagcagctg gtccgtgggg ctactactac gctatggacg tctggggcca agggaccacg      360

gtcaccgtct cctca                                                       375
```

<210> 42
<211> 125
<212> PRT
<213> Homo sapiens

<400> 42

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

Ser Leu Arg Leu Ser Cys Val Val Ser Gly Phe Thr Phe Ser Ser Phe
            20                  25                  30

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

Ser Tyr Ile Ser Ser Arg Ser Ser Thr Ile Tyr Tyr Ala Asp Ser Val
    50                  55                  60
```

```
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Arg Ile Ala Ala Ala Gly Pro Trp Gly Tyr Tyr Tyr Ala Met
            100                 105                 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125
```

<210> 43
<211> 375
<212> DNA
<213> Homo sapiens

<400> 43

```
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc       60

tcctgtgtag tctctggatt caccttcagt agttttagca tgaactgggt ccgccaggct      120

ccagggaagg ggctggagtg ggtttcatac attagtagtc gtagtagtac catatactac      180

gcagactctg tgaagggccg attcaccatc tccagagaca atgccaagaa ctcactgtat      240

ctgcaaatga acagcctgag agacgaggac acggctgtgt attattgtgc gagacgtata      300

gcagcagctg gtccgtgggg ctactactac gctatggacg tctggggcca agggaccacg      360

gtcaccgtct cctca                                                       375
```

<210> 44
<211> 118
<212> PRT
<213> Homo sapiens

<400> 44

```
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1               5                   10                  15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Thr Tyr
            20                  25                  30

Tyr Trp Ser Trp Ile Arg Gln Pro Ala Gly Lys Gly Leu Glu Trp Ile
        35                  40                  45

Gly Leu Ile Tyr Thr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
    50                  55                  60

Ser Arg Val Thr Met Ser Leu Asp Thr Ser Lys Asn Gln Phe Ser Leu
65                  70                  75                  80

Arg Leu Thr Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
                85                  90                  95
```

Arg Asp Arg Gly Tyr Tyr Tyr Gly Val Asp Val Trp Gly Gln Gly Thr
100 105 110

Thr Val Thr Val Ser Ser
115

<210> 45
<211> 354
<212> DNA
<213> Homo sapiens

<400> 45
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60

acctgcactg tctctggtgg ctccatcagt acttactact ggagctggat ccggcagccc 120

gccgggaagg gactggagtg gattgggctt atctatacca gtgggagcac caactacaac 180

ccctccctca agagtcgagt caccatgtca ttagacacgt ccaagaacca gttctccctg 240

aggctgacct ctgtgaccgc cgcggacacg gccgtttatt actgtgcgag agatcgtggg 300

tactactacg gtgtggacgt ctggggccag gggaccacgg tcaccgtctc ctca 354

<210> 46
<211> 120
<212> PRT
<213> Homo sapiens

<400> 46

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly
20 25 30

Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly His Ile His Tyr Ser Gly Asn Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Lys Asn Arg Gly Phe Tyr Tyr Gly Met Asp Val Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 47

<211> 360
<212> DNA
<213> Homo sapiens

<400> 47
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60

acctgcactg tctctggtgg ctccatcagc agtggtggtt actactggag ctggatccgc 120

cagcacccag ggaagggcct ggagtggatt gggcacatcc attacagtgg gaacacctac 180

tacaacccgt ccctcaagag tcgagttacc atatcagtag acacgtctaa gaatcagttc 240

tccctgaaac tgagctctgt gactgccgcg gacacggccg tgtattactg tgcgaaaaat 300

cgcgggttct actacggtat ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

<210> 48
<211> 120
<212> PRT
<213> Homo sapiens

<400> 48

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Asn Ser Gly
20 25 30

Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Ser Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Gln Asn Gln Phe
65 70 75 80

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Asp Arg Gly His Tyr Tyr Gly Met Asp Val Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 49
<211> 360
<212> DNA
<213> Homo sapiens

<400> 49
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60

acctgcactg tctctggtgg ctccatcaac agtggtggtt actactggag ctggatccgc 120

cagcacccag ggaagggcct ggagtggatt gggtacatct attacagtgg gagctcctac 180

tacaacccgt ccctcaagag tcgagttacc atatcagtag acacgtctca gaaccagttc 240

tccctgaagc tgagctctgt gactgccgcg gacacggccg tgtattactg tgcgagagat 300

cgggggcact actacggtat ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

<210> 50
<211> 120
<212> PRT
<213> Homo sapiens

<400> 50

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly
20 25 30

Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Asp Arg Gly His Tyr Tyr Gly Met Asp Val Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 51
<211> 360
<212> DNA
<213> Homo sapiens

<400> 51
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60

acctgcactg tctctggtgg ctccatcagt agtggtggtt actactggag ctggatccgc 120

cagcacccag ggaagggcct ggagtggatt gggtacattt attacagtgg gagcacctac 180

tacaacccgt ccctcaagag tcgagttacc atatcagtag acacgtctaa gaaccagttc 240

tccctgaagc tgagctctgt gactgccgcg gacacggccg tgtattactg tgcgagagat 300

cggggccact actatggaat ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

<210> 52
<211> 118

<212> PRT
<213> Homo sapiens

<400> 52

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Asp Ser Ile Ser Ser Tyr
20 25 30

Phe Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu
35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys
50 55 60

Ser Arg Val Thr Ile Ser Ile Asp Thr Ser Lys Asn Gln Phe Ser Leu
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Thr
85 90 95

Arg Asp Arg Gly Ser Tyr Tyr Gly Ser Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 53
<211> 354
<212> DNA
<213> Homo sapiens

<400> 53
caggtgcagc tgcaggagtc gggcccaaga ctggtgaagc cttcggagac cctgtccctc 60

acctgcactg tctctggtga ctccatcagt agttacttct ggagctggat ccggcagccc 120

ccagggaagg gactggagtg gcttgggtat atctattaca gtgggagcac caactacaac 180

ccctccctca agagtcgagt caccatatca atagacacgt ccaagaacca gttctccctg 240

aagctgagct ctgtgaccgc tgcggacacg gccgtgtatt actgtacgag agatcggggg 300

agctactacg gatctgacta ctggggccag ggaaccctgg tcaccgtctc ctca 354

<210> 54
<211> 120
<212> PRT
<213> Homo sapiens

<400> 54

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly

20 25 30

Gly Tyr Tyr Trp Thr Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Asn Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Ile Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

Ser Leu Ser Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Asn Arg Gly Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 55
<211> 360
<212> DNA
<213> Homo sapiens

<400> 55
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60

acctgcactg tctctggtgg ctccatcagc agtggtggtt actactggac ctggatccgc 120

cagcacccag ggaagggcct ggagtggatt gggtacatct attacagtgg gaacacctac 180

tacaacccgt ccctcaagag tcgaattacc atatcagtgg acacgtctaa gaaccagttc 240

tccctgagcc tgagctctgt gactgccgcg gacacggccg tgtattactg tgcgagaaat 300

cgcgggtact actacggtat ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

<210> 56
<211> 120
<212> PRT
<213> Homo sapiens

<400> 56

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly
20 25 30

Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Met Ser Val Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Lys Asn Arg Gly Phe Tyr Tyr Gly Met Asp Val Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 57
<211> 360
<212> DNA
<213> Homo sapiens

<400> 57
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60

acctgcactg tctctggtgg ctccatcagc agtggtggtt actactggag ctggatccgc 120

cagcacccag ggaagggcct ggagtggatt gggtacatct attacagtgg gagcacctac 180

tacaacccgt ccctcaagag tcgagttacc atgtcagtag acacgtctaa gaaccagttc 240

tccctgaaac tgagctctgt gactgccgcg gacacggccg tgtattactg tgcgaaaaat 300

cgcgggttct actacggtat ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

<210> 58
<211> 120
<212> PRT
<213> Homo sapiens

<400> 58

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Asn Ser Gly
20 25 30

Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Ser Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
65 70 75 80

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Asp Arg Gly His Tyr Tyr Gly Met Asp Val Trp Gly Gln

100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 59
<211> 360
<212> DNA
<213> Homo sapiens

<400> 59
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60

acctgcactg tctctggtgg ctccatcaat agtggtggtt actactggag ctggatccgc 120

cagcacccag ggaagggcct ggagtggatt gggtacatct attacagtgg gagcagctac 180

tacaacccgt ccctcaagag tcgagttacc atatcagttg acacgtctaa gaaccagttc 240

tccctgaagc tgagttctgt gactgccgcg gacacggccg tgtattactg tgcgagagat 300

cgggggcact actacggtat ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

<210> 60
<211> 123
<212> PRT
<213> Homo sapiens

<400> 60

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

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

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

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

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Glu Asn Thr Val Thr Ile Tyr Tyr Asn Tyr Gly Met Asp Val
100 105 110

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

<210> 61
<211> 116
<212> PRT

<213> Artificial

<220>
<223> Consensus Sequence

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Xaa can be Val or Glu

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Xaa can be Asn or Ser

<220>
<221> MISC_FEATURE
<222> (38)..(38)
<223> Xaa can be Gln or Leu

<220>
<221> MISC_FEATURE
<222> (55)..(55)
<223> Xaa can be Ile or Thr

<220>
<221> MISC_FEATURE
<222> (61)..(61)
<223> Xaa can be Asp or Glu

<220>
<221> MISC_FEATURE
<222> (77)..(77)
<223> Xaa can be Tyr or Ser

<220>
<221> MISC_FEATURE
<222> (101)..(101)
<223> Xaa can be Ser or Asn

<400> 61

Gln Pro Xaa Leu Thr Gln Pro Pro Ser Ala Ser Ala Ser Leu Gly Ala
1 5 10 15

Ser Val Thr Leu Thr Cys Thr Leu Xaa Ser Gly Tyr Ser Asp Tyr Lys
20 25 30

Val Asp Trp Tyr Gln Xaa Arg Pro Gly Lys Gly Pro Arg Phe Val Met
35 40 45

Arg Val Gly Thr Gly Gly Xaa Val Gly Ser Lys Gly Xaa Gly Ile Pro
50 55 60

Asp Arg Phe Ser Val Leu Gly Ser Gly Leu Asn Arg Xaa Leu Thr Ile
65 70 75 80

Lys Asn Ile Gln Glu Glu Asp Glu Ser Asp Tyr His Cys Gly Ala Asp
85 90 95

His Gly Ser Gly Xaa Asn Phe Val Tyr Val Phe Gly Thr Gly Thr Lys

100 105 110

Val Thr Val Leu
115

<210> 62
<211> 14
<212> PRT
<213> Homo sapiens

<400> 62

Thr Gly Ser Ser Ser Asn Thr Gly Ala Gly Tyr Asp Val His
1 5 10

<210> 63
<211> 7
<212> PRT
<213> Homo sapiens

<400> 63

Gly Ser Gly Asn Arg Pro Ser
1 5

<210> 64
<211> 11
<212> PRT
<213> Homo sapiens

<400> 64

Gln Ser Tyr Asp Ser Ser Leu Ser Gly Trp Val
1 5 10

<210> 65
<211> 14
<212> PRT
<213> Homo sapiens

<400> 65

Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly Tyr Asp Val His
1 5 10

<210> 66
<211> 7
<212> PRT
<213> Homo sapiens

<400> 66

Gly Ser Asn Asn Arg Pro Ser
1 5

<210> 67
<211> 9
<212> PRT
<213> Homo sapiens

<400> 67

Met Ile Trp His Ser Ser Ala Ser Val
1 5

<210> 68
<211> 14
<212> PRT
<213> Homo sapiens

<400> 68

Thr Leu Arg Ser Gly Ile Asn Val Gly Thr Tyr Arg Ile Tyr
1 5 10

<210> 69
<211> 11
<212> PRT
<213> Homo sapiens

<400> 69

Tyr Lys Ser Asp Ser Asp Lys Gln Gln Gly Ser
1 5 10

<210> 70
<211> 13
<212> PRT
<213> Homo sapiens

<400> 70

Gly Ala Asp His Gly Ser Gly Ser Asn Phe Val Tyr Val
1 5 10

<210> 71
<211> 11
<212> PRT
<213> Homo sapiens

<400> 71

Thr Leu Asn Ser Gly Tyr Ser Asp Tyr Lys Val
1 5 10

<210> 72
<211> 12
<212> PRT
<213> Homo sapiens

<400> 72

Val Gly Thr Gly Gly Ile Val Gly Ser Lys Gly Asp
1 5 10

<210> 73
<211> 13
<212> PRT
<213> Homo sapiens

<400> 73

Gly Ala Asp His Gly Ser Gly Asn Asn Phe Val Tyr Val

1 5 10

<210> 74
<211> 11
<212> PRT
<213> Homo sapiens

<400> 74

Thr Leu Ser Ser Gly Tyr Ser Asp Tyr Lys Val
1 5 10

<210> 75
<211> 12
<212> PRT
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Val Gly Thr Gly Gly Ile Val Gly Ser Lys Gly Glu
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Gln Gln Ala Asn Ser Phe Pro Phe Thr
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Arg Ala Ser Gln Gly Phe Ser Gly Trp Leu Ala
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Val Gly Thr Gly Gly Thr Val Gly Ser Lys Gly Glu
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Ala Ala Ser Ser Leu Gln Ser
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Gln Gln Ala Asp Ser Phe Pro Pro Thr
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<210> 83
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Leu Gln His Asn Ser Tyr Pro Pro Thr
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<400> 85

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1 5 10

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1 5 10

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Arg Ala Ser Gln Gly Ile Ala Gly Trp Leu Ala
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Arg Ala Ser Gln Gly Ile Arg Asn Asp Leu Gly
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Leu Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys
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Gly

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Ser Tyr Gly Met His
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<210> 92
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<400> 92

Val Ile Trp Tyr Asp Gly Ser Asn Glu Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 93
<211> 15
<212> PRT
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<400> 93

Asp Arg Gly Tyr Thr Ser Ser Trp Tyr Pro Asp Ala Phe Asp Ile
1 5 10 15

<210> 94
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<400> 94

Ser Tyr Ala Met His
1 5

<210> 95
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<400> 95

Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 96
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<400> 96

Asp Arg Gly Tyr Ser Ser Ser Trp Tyr Pro Asp Ala Phe Asp Ile
1 5 10 15

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Thr Tyr Ser Met Asn
1 5

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

Gly

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<400> 100

Ser Tyr Ser Met Asn
1 5

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<400> 101

Val Ile Ser His Asp Gly Ser Ile Lys Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 102
<211> 16
<212> PRT
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<400> 102

Arg Ile Ala Ala Ala Gly Gly Phe His Tyr Tyr Tyr Ala Leu Asp Val
1 5 10 15

<210> 103
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<400> 103

Ser Phe Ser Met Asn
1 5

<210> 104
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Tyr Ile Ser Ser Arg Ser Ser Thr Ile Tyr Ile Ala Asp Ser Val Lys
1 5 10 15

Gly

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<400> 105

Arg Ile Ala Ala Ala Gly Pro Trp Gly Tyr Tyr Tyr Ala Met Asp Val
1 5 10 15

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<400> 106

Ser Gly Gly Tyr Tyr Trp Thr
1 5

<210> 107
<211> 17
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<400> 107

Tyr Ile Ser Ser Ser Ser Ser Thr Arg Tyr His Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 108
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<400> 108

Asn Arg Gly Tyr Tyr Tyr Gly Met Asp Val
1 5 10

<210> 109
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<400> 109

Ser Gly Gly Tyr Tyr Trp Ser
1 5

<210> 110
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Tyr Ile Ser Ser Arg Ser Ser Thr Ile Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

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<400> 111

Asn Arg Gly Phe Tyr Tyr Gly Met Asp Val
1 5 10

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Ser Tyr Phe Trp Ser
1 5

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<400> 113

Tyr Ile Tyr Tyr Ser Gly Asn Thr Tyr Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

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Asp Arg Gly His Tyr Tyr Gly Met Asp Val
1 5 10

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<400> 115

Thr Tyr Tyr Trp Ser
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<400> 116

His Ile His Tyr Ser Gly Asn Thr Tyr Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

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Asp Arg Gly Ser Tyr Tyr Gly Ser Asp Tyr
1 5 10

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Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

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<400> 119

Asp Arg Gly Tyr Tyr Tyr Gly Val Asp Val
1 5 10

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<400> 120

Tyr Ile Tyr Tyr Ser Gly Ser Ser Tyr Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

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<400> 121

Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

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<400> 122

Leu Ile Tyr Thr Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys Ser
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<223> Xaa can be Ile, Phe or Ser

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<223> Xaa can be Ser or Gly

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<400> 123

Arg Ala Ser Gln Xaa Xaa Ser Xaa Trp Xaa Ala
1 5 10

<210> 124
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<400> 124

Thr Leu Xaa Ser Gly Tyr Ser Asp Tyr Lys Val Asp
1 5 10

<210> 125
<211> 14
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<400> 125

Thr Gly Ser Ser Ser Asn Xaa Gly Ala Gly Tyr Asp Val His
1 5 10

<210> 126
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<223> Xaa can be Asp or Glu

<400> 126

Val Gly Thr Gly Gly Xaa Val Gly Ser Lys Gly Xaa
1 5 10

<210> 127
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<400> 127

Gly Ser Xaa Asn Arg Pro Ser
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<210> 128
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<400> 128

Gly Ala Asp His Gly Ser Gly Xaa Asn Phe Val Tyr Val
1 5 10

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<223> Xaa can be Ser or Thr

<400> 129

Ser Gly Gly Tyr Tyr Trp Xaa
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<210> 130
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<223> Xaa can be Gly or Ala

<400> 130

Ser Tyr Xaa Met His
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<400> 131

Xaa Xaa Ser Met Asn
1 5

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<223> Xaa can be Thr or Ser

<400> 132

Xaa Ile Xaa Tyr Ser Gly Xaa Xaa Tyr Tyr Asn Pro Ser Leu Lys Ser
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<210> 133
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<223> Xaa can be Leu or Thr

<400> 133

Val Ile Ser Xaa Asp Gly Ser Xaa Lys Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 134
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<223> Xaa can be Ile or Arg

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<223> Xaa can be Ile, His or Try

<400> 134

Tyr Ile Ser Ser Xaa Ser Ser Thr Xaa Tyr Xaa Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 135
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<400> 135

Val Ile Trp Tyr Asp Gly Ser Asn Xaa Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 136
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<220>
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<223> Xaa can be His, Tyr or Phe

<400> 136

Xaa Arg Gly Xaa Tyr Tyr Gly Met Asp Val
1 5 10

<210> 137
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<223> Xaa can be His or Gly

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<223> Xaa can be Leu and Met

<400> 137

Arg Ile Ala Ala Ala Gly Xaa Xaa Xaa Tyr Tyr Tyr Ala Xaa Asp Val
1 5 10 15

<210> 138
<211> 15
<212> PRT
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<223> Xaa can be Ser or Thr

<400> 138

Asp Arg Gly Tyr Xaa Ser Ser Trp Tyr Pro Asp Ala Phe Asp Ile
1 5 10 15

<210> 139
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<223> Xaa can be Ile or Thr

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<223> Xaa can be Val or Leu

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<223> Xaa can be Gly or Asn

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<222> (107)..(107)
<223> Xaa can be Arg or Lys

<400> 139

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

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Xaa Gly Ala Gly
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Xaa Pro Gly Thr Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Gly Ser Xaa Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
85 90 95

Leu Ser Gly Trp Val Phe Gly Gly Gly Thr Xaa Arg Leu Thr Val Leu
100 105 110

<210> 140
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<223> Xaa can be And or Ser

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<223> Xaa can be Asp or Asn

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<223> Xaa can be His, Phe or Try

<400> 140

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Xaa Ser Gly
20 25 30

Gly Tyr Tyr Trp Xaa Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
35 40 45

Trp Ile Gly Xaa Ile Xaa Tyr Ser Gly Xaa Xaa Tyr Tyr Asn Pro Ser
50 55 60

Leu Lys Ser Arg Xaa Thr Xaa Ser Val Asp Thr Ser Xaa Asn Gln Phe
65 70 75 80

Ser Leu Xaa Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Xaa Xaa Arg Gly Xaa Tyr Tyr Gly Met Asp Val Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 141
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<223> Xaa can be His, Try or Ile

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<223> Xaa can be Met or Leu

<400> 141

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
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Ser Leu Arg Leu Ser Cys Xaa Xaa Ser Gly Phe Thr Phe Ser Xaa Xaa
            20                  25                  30

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

Ser Tyr Ile Ser Ser Xaa Ser Ser Thr Xaa Tyr Xaa Ala Asp Ser Val
    50                  55                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Asp Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Arg Ile Ala Ala Ala Gly Xaa Xaa Xaa Tyr Tyr Tyr Ala Xaa
            100                 105                 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125
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<211> 121
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<223> Xaa can be Leu or Ile

<400> 142

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

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

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

Xaa Val Ile Ser Xaa Asp Gly Ser Xaa Lys Tyr Tyr Ala Asp Ser Val
    50                  55                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Ala Arg Glu Arg Thr Thr Leu Ser Gly Ser Tyr Phe Asp Tyr Trp Gly
            100                 105                 110

Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120
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<210> 143
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<220>
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<220>
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<223> Xaa can be Thr or Ser

<400> 143

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

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

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

Ala Val Ile Trp Tyr Asp Gly Ser Asn Xaa Tyr Tyr Ala Asp Ser Val
    50                  55                  60
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Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Asp Arg Gly Tyr Xaa Ser Ser Trp Tyr Pro Asp Ala Phe Asp
100 105 110

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

<210> 144
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<400> 144
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caaagcaagt ggaagtgggc agagattcca ccaggactgg tgcaaggcgc agagccagcc 120

agatttgaga agaaggcaaa aagatgctgg ggagcagagc tgtaatgctg ctgttgctgc 180

tgccctggac agctcagggc agagctgtgc ctgggggcag cagccctgcc tggactcagt 240

gccagcagct ttcacagaag ctctgcacac tggcctggag tgcacatcca ctagtgggac 300

acatggatct aagagaagag ggagatgaag agactacaaa tgatgttccc catatccagt 360

gtggagatgg ctgtgacccc caaggactca gggacaacag tcagttctgc ttgcaaagga 420

tccaccaggg tctgattttt tatgagaagc tgctaggatc ggatattttc acaggggagc 480

cttctctgct ccctgatagc cctgtgggcc agcttcatgc ctccctactg ggcctcagcc 540

aactcctgca gcctgagggt caccactggg agactcagca gattccaagc ctcagtccca 600

gccagccatg gcagcgtctc cttctccgct tcaaaatcct tcgcagcctc caggcctttg 660

tggctgtagc cgcccgggtc tttgcccatg gagcagcaac cctgagtccc taaaggcagc 720

agctcaagga tggcactcag atctccatgg cccagcaagg ccaagataaa tctaccaccc 780

caggcacctg tgagccaaca ggttaattag tccattaatt ttagtgggac ctgcatatgt 840

tgaaaattac caatactgac tgacatgtga tgctgaccta tgataaggtt gagtatttat 900

tagatgggaa gggaaatttg gggattattt atcctcctgg ggacagtttg gggaggatta 960

tttattgtat ttatattgaa ttatgtactt ttttcaataa agtcttattt ttgtggctaa 1020

aaaaaa 1026

<210> 145
<211> 189
<212> PRT
<213> Homo sapiens

<400> 145

Met Leu Gly Ser Arg Ala Val Met Leu Leu Leu Leu Leu Pro Trp Thr

1 5 10 15

Ala Gln Gly Arg Ala Val Pro Gly Gly Ser Ser Pro Ala Trp Thr Gln
20 25 30

Cys Gln Gln Leu Ser Gln Lys Leu Cys Thr Leu Ala Trp Ser Ala His
35 40 45

Pro Leu Val Gly His Met Asp Leu Arg Glu Glu Gly Asp Glu Glu Thr
50 55 60

Thr Asn Asp Val Pro His Ile Gln Cys Gly Asp Gly Cys Asp Pro Gln
65 70 75 80

Gly Leu Arg Asp Asn Ser Gln Phe Cys Leu Gln Arg Ile His Gln Gly
85 90 95

Leu Ile Phe Tyr Glu Lys Leu Leu Gly Ser Asp Ile Phe Thr Gly Glu
100 105 110

Pro Ser Leu Leu Pro Asp Ser Pro Val Gly Gln Leu His Ala Ser Leu
115 120 125

Leu Gly Leu Ser Gln Leu Leu Gln Pro Glu Gly His His Trp Glu Thr
130 135 140

Gln Gln Ile Pro Ser Leu Ser Pro Ser Gln Pro Trp Gln Arg Leu Leu
145 150 155 160

Leu Arg Phe Lys Ile Leu Arg Ser Leu Gln Ala Phe Val Ala Val Ala
165 170 175

Ala Arg Val Phe Ala His Gly Ala Ala Thr Leu Ser Pro
180 185

<210> 146
<211> 1399
<212> DNA
<213> Homo sapiens

<400> 146
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gtcatctctt ggttttccct ggtttttctg gcatctcccc tcgtggccat atgggaactg 120

aagaaagatg tttatgtcgt agaattggat tggtatccgg atgcccctgg agaaatggtg 180

gtcctcacct gtgacacccc tgaagaagat ggtatcacct ggaccttgga ccagagcagt 240

gaggtcttag gctctggcaa aaccctgacc atccaagtca aagagtttgg agatgctggc 300

cagtacacct gtcacaaagg aggcgaggtt ctaagccatt cgctcctgct gcttcacaaa 360

aaggaagatg gaatttggtc cactgatatt ttaaaggacc agaaagaacc caaaaataag 420

acctttctaa gatgcgaggc caagaattat tctggacgtt tcacctgctg gtggctgacg 480

acaatcagta ctgatttgac attcagtgtc aaaagcagca gaggctcttc tgacccccaa 540

ggggtgacgt gcggagctgc tacactctct gcagagagag tcagagggga caacaaggag 600

tatgagtact cagtggagtg ccaggaggac agtgcctgcc cagctgctga ggagagtctg 660

cccattgagg tcatggtgga tgccgttcac aagctcaagt atgaaaacta caccagcagc 720

ttcttcatca gggacatcat caaacctgac ccacccaaga acttgcagct gaagccatta 780

aagaattctc ggcaggtgga ggtcagctgg gagtaccctg acacctggag tactccacat 840

tcctacttct ccctgacatt ctgcgttcag gtccagggca agagcaagag agaaaagaaa 900

gatagagtct tcacggacaa gacctcagcc acggtcatct gccgcaaaaa tgccagcatt 960

agcgtgcggg cccaggaccg ctactatagc tcatcttgga gcgaatgggc atctgtgccc 1020

tgcagttagg ttctgatcca ggatgaaaat ttggaggaaa agtggaagat attaagcaaa 1080

atgtttaaag acacaacgga atagacccaa aaagataatt tctatctgat ttgctttaaa 1140

acgttttttt aggatcacaa tgatatcttt gctgtatttg tatagttaga tgctaaatgc 1200

tcattgaaac aatcagctaa tttatgtata gattttccag ctctcaagtt gccatgggcc 1260

ttcatgctat ttaaatattt aagtaattta tgtatttatt agtatattac tgttatttaa 1320

cgtttgtctg ccaggatgta tggaatgttt catactctta tgacctgatc catcaggatc 1380

agtccctatt atgcaaaat 1399

<210> 147
<211> 328
<212> PRT
<213> Homo sapiens

<400> 147

Met Cys His Gln Gln Leu Val Ile Ser Trp Phe Ser Leu Val Phe Leu
1 5 10 15

Ala Ser Pro Leu Val Ala Ile Trp Glu Leu Lys Lys Asp Val Tyr Val
20 25 30

Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu
35 40 45

Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln
50 55 60

Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys
65 70 75 80

Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
85 90 95

Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp
100 105 110

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

Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
130 135 140

Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg
145 150 155 160

Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser
165 170 175

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
180 185 190

Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile
195 200 205

Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
210 215 220

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
225 230 235 240

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
245 250 255

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
260 265 270

Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
275 280 285

Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala
290 295 300

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
305 310 315 320

Glu Trp Ala Ser Val Pro Cys Ser
325

<210> 148
<211> 2826
<212> DNA
<213> Homo sapiens

<400> 148
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aaacagtctt ttcctgcttc cagacatgaa tcaggtcact attcaatggg atgcagtaat 120

agccctttac atactcttca gctggtgtca tggaggaatt acaaatataa actgctctgg 180

ccacatctgg gtagaaccag ccacaatttt taagatgggt atgaatatct ctatatattg 240

ccaagcagca attaagaact gccaaccaag gaaacttcat ttttataaaa atggcatcaa 300

agaaagattt caaatcacaa ggattaataa aacaacagct cggctttggt ataaaaactt 360

tctggaacca catgcttcta tgtactgcac tgctgaatgt cccaaacatt ttcaagagac 420

actgatatgt ggaaaagaca tttcttctgg atatccgcca gatattcctg atgaagtaac 480

ctgtgtcatt tatgaatatt caggcaacat gacttgcacc tggaatgctg ggaagctcac 540

ctacatagac acaaaatacg tggtacatgt gaagagttta gagacagaag aagagcaaca 600

gtatctcacc tcaagctata ttaacatctc cactgattca ttacaaggtg gcaagaagta 660

cttggtttgg gtccaagcag caaacgcact aggcatggaa gagtcaaaac aactgcaaat 720

tcacctggat gatatagtga taccttctgc agccgtcatt tccagggctg agactataaa 780

tgctacagtg cccaagacca taatttattg ggatagtcaa acaacaattg aaaaggtttc 840

ctgtgaaatg agatacaagg ctacaacaaa ccaaacttgg aatgttaaag aatttgacac 900

caattttaca tatgtgcaac agtcagaatt ctacttggag ccaaacatta agtacgtatt 960

tcaagtgaga tgtcaagaaa caggcaaaag gtactggcag ccttggagtt cactgttttt 1020

tcataaaaca cctgaaacag ttccccaggt cacatcaaaa gcattccaac atgacacatg 1080

gaattctggg ctaacagttg cttccatctc tacagggcac cttacttctg acaacagagg 1140

agacattgga cttttattgg gaatgatcgt ctttgctgtt atgttgtcaa ttctttcttt 1200

gattgggata tttaacagat cattccgaac tgggattaaa agaaggatct tattgttaat 1260

accaaagtgg ctttatgaag atattcctaa tatgaaaaac agcaatgttg tgaaaatgct 1320

acaggaaaat agtgaactta tgaataataa ttccagtgag caggtcctat atgttgatcc 1380

catgattaca gagataaaag aaatcttcat cccagaacac aagcctacag actacaagaa 1440

ggagaataca ggacccctgg agacaagaga ctacccgcaa aactcgctat tcgacaatac 1500

tacagttgta tatattcctg atctcaacac tggatataaa ccccaaattt caaattttct 1560

gcctgaggga agccatctca gcaataataa tgaaattact tccttaacac ttaaaccacc 1620

agttgattcc ttagactcag gaaataatcc caggttacaa aagcatccta attttgcttt 1680

ttctgtttca agtgtgaatt cactaagcaa cacaatattt cttggagaat taagcctcat 1740

attaaatcaa ggagaatgca gttctcctga catacaaaac tcagtagagg aggaaaccac 1800

catgcttttg gaaaatgatt cacccagtga aactattcca gaacagaccc tgcttcctga 1860

tgaatttgtc tcctgtttgg ggatcgtgaa tgaggagttg ccatctatta atacttattt 1920

tccacaaaat attttggaaa gccacttcaa taggatttca ctcttggaaa agtagagctg 1980

tgtggtcaaa atcaatatga gaaagctgcc ttgcaatctg aacttgggtt ttccctgcaa 2040

tagaaattga attctgcctc tttttgaaaa aaatgtattc acatacaaat cttcacatgg 2100

acacatgttt tcatttccct tggataaata cctaggtagg ggattgctgg gccatatgat 2160

aagcatatgt ttcagttcta ccaatcttgt ttccagagta gtgacatttc tgtgctccta 2220

ccatcaccat gtaagaattc ccgggagctc catgcctttt taattttagc cattcttctg 2280

cctcatttct taaaattaga gaattaaggt cccgaaggtg gaacatgctt catggtcaca 2340

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aaaaaa 2826

<210> 149
<211> 629
<212> PRT
<213> Homo sapiens

<400> 149

Met Asn Gln Val Thr Ile Gln Trp Asp Ala Val Ile Ala Leu Tyr Ile
1 5 10 15

Leu Phe Ser Trp Cys His Gly Gly Ile Thr Asn Ile Asn Cys Ser Gly
20 25 30

His Ile Trp Val Glu Pro Ala Thr Ile Phe Lys Met Gly Met Asn Ile
35 40 45

Ser Ile Tyr Cys Gln Ala Ala Ile Lys Asn Cys Gln Pro Arg Lys Leu
50 55 60

His Phe Tyr Lys Asn Gly Ile Lys Glu Arg Phe Gln Ile Thr Arg Ile
65 70 75 80

Asn Lys Thr Thr Ala Arg Leu Trp Tyr Lys Asn Phe Leu Glu Pro His
85 90 95

Ala Ser Met Tyr Cys Thr Ala Glu Cys Pro Lys His Phe Gln Glu Thr
100 105 110

Leu Ile Cys Gly Lys Asp Ile Ser Ser Gly Tyr Pro Pro Asp Ile Pro
115 120 125

Asp Glu Val Thr Cys Val Ile Tyr Glu Tyr Ser Gly Asn Met Thr Cys
130 135 140

Thr Trp Asn Ala Gly Lys Leu Thr Tyr Ile Asp Thr Lys Tyr Val Val

145 150 155 160

His Val Lys Ser Leu Glu Thr Glu Glu Glu Gln Gln Tyr Leu Thr Ser
165 170 175

Ser Tyr Ile Asn Ile Ser Thr Asp Ser Leu Gln Gly Gly Lys Lys Tyr
180 185 190

Leu Val Trp Val Gln Ala Ala Asn Ala Leu Gly Met Glu Glu Ser Lys
195 200 205

Gln Leu Gln Ile His Leu Asp Asp Ile Val Ile Pro Ser Ala Ala Val
210 215 220

Ile Ser Arg Ala Glu Thr Ile Asn Ala Thr Val Pro Lys Thr Ile Ile
225 230 235 240

Tyr Trp Asp Ser Gln Thr Thr Ile Glu Lys Val Ser Cys Glu Met Arg
245 250 255

Tyr Lys Ala Thr Thr Asn Gln Thr Trp Asn Val Lys Glu Phe Asp Thr
260 265 270

Asn Phe Thr Tyr Val Gln Gln Ser Glu Phe Tyr Leu Glu Pro Asn Ile
275 280 285

Lys Tyr Val Phe Gln Val Arg Cys Gln Glu Thr Gly Lys Arg Tyr Trp
290 295 300

Gln Pro Trp Ser Ser Leu Phe Phe His Lys Thr Pro Glu Thr Val Pro
305 310 315 320

Gln Val Thr Ser Lys Ala Phe Gln His Asp Thr Trp Asn Ser Gly Leu
325 330 335

Thr Val Ala Ser Ile Ser Thr Gly His Leu Thr Ser Asp Asn Arg Gly
340 345 350

Asp Ile Gly Leu Leu Leu Gly Met Ile Val Phe Ala Val Met Leu Ser
355 360 365

Ile Leu Ser Leu Ile Gly Ile Phe Asn Arg Ser Phe Arg Thr Gly Ile
370 375 380

Lys Arg Arg Ile Leu Leu Leu Ile Pro Lys Trp Leu Tyr Glu Asp Ile
385 390 395 400

Pro Asn Met Lys Asn Ser Asn Val Val Lys Met Leu Gln Glu Asn Ser
405 410 415

Glu Leu Met Asn Asn Asn Ser Ser Glu Gln Val Leu Tyr Val Asp Pro

420 425 430

Met Ile Thr Glu Ile Lys Glu Ile Phe Ile Pro Glu His Lys Pro Thr
435 440 445

Asp Tyr Lys Lys Glu Asn Thr Gly Pro Leu Glu Thr Arg Asp Tyr Pro
450 455 460

Gln Asn Ser Leu Phe Asp Asn Thr Thr Val Val Tyr Ile Pro Asp Leu
465 470 475 480

Asn Thr Gly Tyr Lys Pro Gln Ile Ser Asn Phe Leu Pro Glu Gly Ser
485 490 495

His Leu Ser Asn Asn Asn Glu Ile Thr Ser Leu Thr Leu Lys Pro Pro
500 505 510

Val Asp Ser Leu Asp Ser Gly Asn Asn Pro Arg Leu Gln Lys His Pro
515 520 525

Asn Phe Ala Phe Ser Val Ser Ser Val Asn Ser Leu Ser Asn Thr Ile
530 535 540

Phe Leu Gly Glu Leu Ser Leu Ile Leu Asn Gln Gly Glu Cys Ser Ser
545 550 555 560

Pro Asp Ile Gln Asn Ser Val Glu Glu Glu Thr Thr Met Leu Leu Glu
565 570 575

Asn Asp Ser Pro Ser Glu Thr Ile Pro Glu Gln Thr Leu Leu Pro Asp
580 585 590

Glu Phe Val Ser Cys Leu Gly Ile Val Asn Glu Glu Leu Pro Ser Ile
595 600 605

Asn Thr Tyr Phe Pro Gln Asn Ile Leu Glu Ser His Phe Asn Arg Ile
610 615 620

Ser Leu Leu Glu Lys
625

<210> 150
<211> 2100
<212> DNA
<213> Homo sapiens

<400> 150
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tccgatggag ccgctggtga cctgggtggt ccccctcctc ttcctcttcc tgctgtccag 120

gcagggcgct gcctgcagaa ccagtgagtg ctgttttcag gacccgccat atccggatgc 180

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ctccgaccag gctggggtgt ctgtgctgta cactgtcaca ctctgggtgg aatcctgggc 420

caggaaccag acagagaagt ctcctgaggt gaccctgcag ctctacaact cagttaaata 480

tgagcctcct ctgggagaca tcaaggtgtc caagttggcc gggcagctgc gtatggagtg 540

ggagaccccg gataaccagg ttggtgctga ggtgcagttc cggcaccgga cacccagcag 600

cccatggaag ttgggcgact gcggacctca ggatgatgat actgagtcct gcctctgccc 660

cctggagatg aatgtggccc aggaattcca gctccgacga cggcagctgg ggagccaagg 720

aagttcctgg agcaagtgga gcagccccgt gtgcgttccc cctgaaaacc ccccacagcc 780

tcaggtgaga ttctcggtgg agcagctggg ccaggatggg aggaggcggc tgaccctgaa 840

agagcagcca acccagctgg agcttccaga aggctgtcaa gggctggcgc ctggcacgga 900

ggtcacttac cgactacagc tccacatgct gtcctgcccg tgtaaggcca aggccaccag 960

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cacagaacca gtggctctga atatcagcgt cggaaccaac gggaccacca tgtattggcc 1140

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ccttgccacc tgcagcctga ctgcgccgca agacccggat ccggctggaa tggcaaccta 1260

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gccgctgccc acaccctgtg ccagctccgc cattgagttc cctggaggga aggagacttg 1860

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agagatgtcc tgggacaaag gcgagaggac tgagcctctc gagaagacag agctacctga 1980

gggtgcccct gagctggccc tggatacaga gttgtccttg gaggatggag acaggtgcaa 2040

ggccaagatg tgatcgttga ggctcagaga gggtgagtga ctcgcccgag gctacgtagc 2100

<210> 151
<211> 662
<212> PRT
<213> Homo sapiens

<400> 151

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Met Glu Pro Leu Val Thr Trp Val Val Pro Leu Leu Phe Leu Phe Leu
1               5                  10                  15

Leu Ser Arg Gln Gly Ala Ala Cys Arg Thr Ser Glu Cys Cys Phe Gln
            20                  25                  30

Asp Pro Pro Tyr Pro Asp Ala Asp Ser Gly Ser Ala Ser Gly Pro Arg
        35                  40                  45

Asp Leu Arg Cys Tyr Arg Ile Ser Ser Asp Arg Tyr Glu Cys Ser Trp
    50                  55                  60

Gln Tyr Glu Gly Pro Thr Ala Gly Val Ser His Phe Leu Arg Cys Cys
65                  70                  75                  80

Leu Ser Ser Gly Arg Cys Cys Tyr Phe Ala Ala Gly Ser Ala Thr Arg
                85                  90                  95

Leu Gln Phe Ser Asp Gln Ala Gly Val Ser Val Leu Tyr Thr Val Thr
            100                 105                 110

Leu Trp Val Glu Ser Trp Ala Arg Asn Gln Thr Glu Lys Ser Pro Glu
        115                 120                 125

Val Thr Leu Gln Leu Tyr Asn Ser Val Lys Tyr Glu Pro Pro Leu Gly
    130                 135                 140

Asp Ile Lys Val Ser Lys Leu Ala Gly Gln Leu Arg Met Glu Trp Glu
145                 150                 155                 160

Thr Pro Asp Asn Gln Val Gly Ala Glu Val Gln Phe Arg His Arg Thr
                165                 170                 175

Pro Ser Ser Pro Trp Lys Leu Gly Asp Cys Gly Pro Gln Asp Asp Asp
            180                 185                 190

Thr Glu Ser Cys Leu Cys Pro Leu Glu Met Asn Val Ala Gln Glu Phe
        195                 200                 205

Gln Leu Arg Arg Arg Gln Leu Gly Ser Gln Gly Ser Ser Trp Ser Lys
    210                 215                 220

Trp Ser Ser Pro Val Cys Val Pro Pro Glu Asn Pro Pro Gln Pro Gln
225                 230                 235                 240

Val Arg Phe Ser Val Glu Gln Leu Gly Gln Asp Gly Arg Arg Arg Leu
                245                 250                 255

Thr Leu Lys Glu Gln Pro Thr Gln Leu Glu Leu Pro Glu Gly Cys Gln
```

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            260                 265                 270

Gly Leu Ala Pro Gly Thr Glu Val Thr Tyr Arg Leu Gln Leu His Met
        275                 280                 285

Leu Ser Cys Pro Cys Lys Ala Lys Ala Thr Arg Thr Leu His Leu Gly
    290                 295                 300

Lys Met Pro Tyr Leu Ser Gly Ala Ala Tyr Asn Val Ala Val Ile Ser
305                 310                 315                 320

Ser Asn Gln Phe Gly Pro Gly Leu Asn Gln Thr Trp His Ile Pro Ala
                325                 330                 335

Asp Thr His Thr Glu Pro Val Ala Leu Asn Ile Ser Val Gly Thr Asn
            340                 345                 350

Gly Thr Thr Met Tyr Trp Pro Ala Arg Ala Gln Ser Met Thr Tyr Cys
        355                 360                 365

Ile Glu Trp Gln Pro Val Gly Gln Asp Gly Gly Leu Ala Thr Cys Ser
    370                 375                 380

Leu Thr Ala Pro Gln Asp Pro Asp Pro Ala Gly Met Ala Thr Tyr Ser
385                 390                 395                 400

Trp Ser Arg Glu Ser Gly Ala Met Gly Gln Glu Lys Cys Tyr Tyr Ile
                405                 410                 415

Thr Ile Phe Ala Ser Ala His Pro Glu Lys Leu Thr Leu Trp Ser Thr
            420                 425                 430

Val Leu Ser Thr Tyr His Phe Gly Gly Asn Ala Ser Ala Ala Gly Thr
        435                 440                 445

Pro His His Val Ser Val Lys Asn His Ser Leu Asp Ser Val Ser Val
    450                 455                 460

Asp Trp Ala Pro Ser Leu Leu Ser Thr Cys Pro Gly Val Leu Lys Glu
465                 470                 475                 480

Tyr Val Val Arg Cys Arg Asp Glu Asp Ser Lys Gln Val Ser Glu His
                485                 490                 495

Pro Val Gln Pro Thr Glu Thr Gln Val Thr Leu Ser Gly Leu Arg Ala
            500                 505                 510

Gly Val Ala Tyr Thr Val Gln Val Arg Ala Asp Thr Ala Trp Leu Arg
        515                 520                 525

Gly Val Trp Ser Gln Pro Gln Arg Phe Ser Ile Glu Val Gln Val Ser
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530 535 540

Asp Trp Leu Ile Phe Phe Ala Ser Leu Gly Ser Phe Leu Ser Ile Leu
545 550 555 560

Leu Val Gly Val Leu Gly Tyr Leu Gly Leu Asn Arg Ala Ala Arg His
565 570 575

Leu Cys Pro Pro Leu Pro Thr Pro Cys Ala Ser Ser Ala Ile Glu Phe
580 585 590

Pro Gly Gly Lys Glu Thr Trp Gln Trp Ile Asn Pro Val Asp Phe Gln
595 600 605

Glu Glu Ala Ser Leu Gln Glu Ala Leu Val Val Glu Met Ser Trp Asp
610 615 620

Lys Gly Glu Arg Thr Glu Pro Leu Glu Lys Thr Glu Leu Pro Glu Gly
625 630 635 640

Ala Pro Glu Leu Ala Leu Asp Thr Glu Leu Ser Leu Glu Asp Gly Asp
645 650 655

Arg Cys Lys Ala Lys Met
660

<210> 152
<211> 360
<212> DNA
<213> Homo sapiens

<400> 152
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acctgcactg tctctggtgg ctccatcagc agtggtggtt actactggag ctggatccgc 120

cagcacccag ggaagggcct ggagtggatt gggcacatcc attacagtgg gaacacctac 180

tacaacccgt ccctcaagag tcgagttacc atatcagtag acacgtctaa gaatcagttc 240

tccctgaaac tgagctctgt gactgccgcg gacacggccg tgtattactg tgcgcgaaat 300

cgcgggttct actacggtat ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

<210> 153
<211> 120
<212> PRT
<213> Homo sapiens

<400> 153

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly
20 25 30

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Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
        35                  40                  45

Trp Ile Gly His Ile His Tyr Ser Gly Asn Thr Tyr Tyr Asn Pro Ser
    50                  55                  60

Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe
65                  70                  75                  80

Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ala Arg Asn Arg Gly Phe Tyr Tyr Gly Met Asp Val Trp Gly Gln
            100                 105                 110

Gly Thr Thr Val Thr Val Ser Ser
        115                 120
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<210> 154
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> Honeybee melittin signal

<400> 154

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Met Lys Phe Leu Val Asn Val Ala Leu Val Phe Met Val Val Tyr Ile
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Ser Tyr Ile Tyr Ala Ala Ala
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<220>
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<400> 155

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His His His His His His
1               5
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