SEQUENCE LISTING

<110> THERACLONE SCIENCES, INC.
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<120> COMPOSITIONS AND METHODS FOR THE THERAPY AND DIAGNOSIS OF INFLUENZA

<130> 37418-517001WO

<150> 61/234,145
<151> 2009-08-14

<150> 61/180,027
<151> 2009-05-20

<160> 327

<170> PatentIn version 3.5

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Cys Arg Cys Asn Asp Ser Ser Asp
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Cys Arg Cys Asn Asp Ser Ser Asp

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Cys Lys Cys Asn Asp Ser Ser Asp
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Cys Arg Cys Asn Asp Ser Ser Asp
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<212> PRT
<213> Influenza A virus

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Met Ser Leu Leu Pro Glu Val Glu Thr Pro Ile Arg Asn Gly Trp Gly
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Cys Arg Cys Asn Asp Ser Ser Asp
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<210> 13
<211> 24
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<400> 13

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asn Gly Trp Glu
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Cys Arg Cys Ser Gly Ser Ser Asp
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<400> 14

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Glu
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Tyr Arg Cys Asn Asp Ser Ser Asp
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<210> 15
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Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Glu
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Tyr Arg Cys Ser Asp Ser Ser Asp
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Met Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asn Gly Trp Glu
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Cys Arg Tyr Ser Asp Ser Ser Asp
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Met Ser Phe Leu Thr Glu Val Glu Thr Leu Thr Arg Asn Gly Trp Glu
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Cys Arg Cys Ser Asp Ser Ser Asp
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<400> 18

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<400> 19

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<400> 21

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Cys Lys Cys Ser Asp Ser Ser Asp
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<400> 27

Met Ser Leu Leu Thr Glu Val Glu Thr His Thr Arg Asn Gly Trp Glu
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Cys Lys Cys Ser Asp Ser Ser Asp
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<211> 24
<212> PRT
<213> Influenza A virus

<400> 28

Met Ser Leu Leu Thr Glu Val Lys Thr Pro Thr Arg Asn Gly Trp Glu
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Cys Lys Cys Ser Asp Ser Ser Asp
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<210> 29
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<400> 29

Met Ser Leu Leu Thr Glu Val Glu Thr Leu Thr Arg Asn Gly Trp Gly
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Cys Arg Cys Ser Asp Ser Ser Asp
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<210> 30
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<400> 30

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asp Gly Trp Glu
1 5 10 15

Cys Lys Cys Ser Asp Ser Ser Asp
20

<210> 31
<211> 24
<212> PRT
<213> Influenza A virus

<400> 31

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asn Gly Trp Gly
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Cys Arg Cys Ser Asp Ser Ser Asp
20

<210> 32
<211> 24
<212> PRT
<213> Influenza A virus

<400> 32

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asn Gly Trp Glu
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Cys Lys Cys Asn Asp Ser Ser Asp
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<210> 33
<211> 24
<212> PRT
<213> Influenza A virus

<400> 33

Met Ser Leu Leu Thr Glu Val Glu Thr Leu Thr Arg Asn Gly Trp Glu
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Cys Lys Cys Ser Asp Ser Ser Asp
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<211> 24
<212> PRT
<213> Influenza A virus

<400> 34

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
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Cys Lys Cys Asn Asp Ser Ser Asp
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<210> 35
<211> 24
<212> PRT
<213> Influenza A virus

<400> 35

Met Ser Phe Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly

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Cys Arg Cys Asn Gly Ser Ser Asp
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<210> 36
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<212> PRT
<213> Influenza A virus

<400> 36

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asn Gly Trp Glu
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<400> 37

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Lys Gly Trp Glu
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Cys Asn Cys Ser Asp Ser Ser Asp
20

<210> 38
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<213> Influenza A virus

<400> 38

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asn Glu Trp Glu
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Cys Arg Cys Ser Asp Ser Ser Asp
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<210> 39
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<212> PRT
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<400> 39

Met Ser Leu Leu Thr Gly Val Glu Thr His Thr Arg Asn Gly Trp Gly
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Cys Lys Cys Ser Asp Ser Ser Asp
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<213> Influenza A virus

<400> 40

Met Ser Leu Leu Pro Glu Val Glu Thr His Thr Arg Asn Gly Trp Gly
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Cys Arg Cys Ser Asp Ser Ser Asp
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<210> 41
<211> 8
<212> PRT
<213> Homo sapiens

<400> 41

Ser Leu Leu Thr Glu Val Glu Thr
1 5

<210> 42
<211> 6
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<213> Homo sapiens

<400> 42

Ser Leu Leu Thr Glu Val
1 5

<210> 43
<211> 357
<212> DNA
<213> Homo sapiens

<400> 43
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acctgcactg tctctggttc gtccatcagt aattactact ggagctggat ccggcagtcc 120

ccagggaagg gactggagtg gattgggttt atctattacg gtggaaacac caagtacaat 180

ccctccctca agagccgcgt caccatatca caagacactt ccaagagtca ggtctccctg 240

acgatgagct ctgtgaccgc tgcggaatcg gccgtctatt tctgtgcgag agcgtcttgt 300

agtggtggtt actgtatcct tgactactgg ggccagggaa ccctggtcac cgtctcg 357

<210> 44
<211> 119
<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 Ser Ser Ile Ser Asn Tyr
20 25 30

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

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

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

Thr Met Ser Ser Val Thr Ala Ala Glu Ser Ala Val Tyr Phe Cys Ala
                85                  90                  95

Arg Ala Ser Cys Ser Gly Gly Tyr Cys Ile Leu Asp Tyr Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser
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<210> 45
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<212> DNA
<213> Homo sapiens

<400> 45

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atcacttgcc gggcgagtca gaacatttac aagtatttaa attggtatca gcagagacca      120

gggaaagccc ctaagggcct gatctctgct gcatccgggt tgcaaagtgg ggtcccatca      180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcaccag tctgcaacct      240

gaagattttg caacttacta ctgtcaacag agttacagtc cccctctcac tttcggcgga      300

gggaccaggg tggagatcaa ac                                               322
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<212> PRT
<213> Homo sapiens

<400> 46

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

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

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

Ser Ala Ala Ser Gly Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
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Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Ser Leu Gln Pro
65 70 75 80

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

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

<210> 47
<211> 357
<212> DNA
<213> Homo sapiens

<400> 47
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acctgcactg tctctggttc gtccatcagt aattactact ggagctggat ccggcagtcc 120

ccagggaagg gactggagtg gattgggttt atctattacg gtggaaacac caagtacaat 180

ccctccctca agagccgcgt caccatatca caagacactt ccaagagtca ggtctccctg 240

acgatgagct ctgtgaccgc tgcggaatcg gccgtctatt tctgtgcgag agcgtcttgt 300

agtggtggtt actgtatcct tgactactgg ggccagggaa ccctggtcac cgtctcg 357

<210> 48
<211> 322
<212> DNA
<213> Homo Sapiens

<400> 48
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atcacttgcc gcgcgagtca gaacatttac aagtatttaa attggtatca gcagagacca 120

gggaaagccc ctaagggcct gatctctgct gcatccgggt tgcaaagtgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcaccag tctgcaacct 240

gaagattttg caacttacta ctgtcaacag agttacagtc cccctctcac tttcggcgga 300

gggaccaggg tggatatcaa ac 322

<210> 49
<211> 357
<212> DNA
<213> Homo sapiens

<400> 49
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tcctgtgcag cctctggatt caccgtcagt agcaactaca tgagttgggt ccgccaggct 120

ccagggaagg ggctggagtg ggtctcagtt atttatagtg gtggtagcac atactacgca 180

gactccgtga agggcagatt ctccttctcc agagacaact ccaagaacac agtgtttctt 240

caaatgaaca gcctgagagc cgaggacacg gctgtgtatt actgtgcgag atgtctgagc 300

aggatgcggg gttacggttt agacgtctgg ggccaaggga ccacggtcac cgtctcg 357

<210> 50
<211> 119
<212> PRT
<213> Homo sapiens

<400> 50

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

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

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

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

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

Arg Cys Leu Ser Arg Met Arg Gly Tyr Gly Leu Asp Val Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser
115

<210> 51
<211> 318
<212> DNA
<213> Homo sapiens

<400> 51
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gggaaagccc ctaaactcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcgg tctgcaacct 240

gaagattttg caacctacta ctgtcaacag agttacagta tgcctgcctt tggccagggg 300

accaagctgg agatcaaa 318

<210> 52
<211> 106
<212> PRT
<213> Homo sapiens

<400> 52

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
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Asp Arg Val Thr Ile Thr Cys Arg Thr 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 Gly Leu Gln Pro
65 70 75 80

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

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

<210> 53
<211> 291
<212> DNA
<213> Influenza virus A

<400> 53
atgagtcttc taaccgaggt cgaaacgcct atcagaaacg aatgggggtg cagatgcaac 60

gattcaagtg atcctcttgt tgttgccgca agtatcattg ggatcctgca cttgatattg 120

tggattcttg atcgtctttt tttcaaatgc atttatcgtc tctttaaaca cggtctgaaa 180

agagggcctt ctacggaagg agtaccagag tctatgaggg aagaatatcg aaaggaacag 240

cagagtgctg tggatgctga cgatagtcat tttgtcaaca tagagctgga g 291

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<223> Recombinant kappa light chain variable region

<400> 54
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tccgaggtgc cagatgtgac atccagatga cccagtctcc atcctccctg tctgcatctg 120

taggagacag agtcaccatc acttgccggg cgagtcagaa catttacaag tatttaaatt 180

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aaagtggggt cccatcaagg ttcagtggca gtggatctgg gacagatttc actctcacca 300

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ctctcacttt cggcggaggg accagggtgg agatcaaacg tacg 404

<210> 55

<211> 404
<212> DNA
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<223> Recombinant kappa light chain variable region

<400> 55
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ttgacagtag taagttgcaa aatcttcagg ttgcagactg gtgatggtga gagtgaaatc 120

tgtcccagat ccactgccac tgaaccttga tgggacccca ctttgcaacc cggatgcagc 180

agagatcagg cccttagggg ctttccctgg tctctgctga taccaattta aatacttgta 240

aatgttctga ctcgcccggc aagtgatggt gactctgtct cctacagatg cagacaggga 300

ggatggagac tgggtcatct ggatgtcaca tctggcacct cggagccaga gtagcaggag 360

ccccaggagc tgagcgagga ccctcatgtc catggtggaa gctt 404

<210> 56
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<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant kappa light chain variable region

<400> 56

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Leu Arg Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser
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Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser
35 40 45

Gln Asn Ile Tyr Lys Tyr Leu Asn Trp Tyr Gln Gln Arg Pro Gly Lys
50 55 60

Ala Pro Lys Gly Leu Ile Ser Ala Ala Ser Gly Leu Gln Ser Gly Val
65 70 75 80

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
85 90 95

Ile Thr Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
100 105 110

Ser Tyr Ser Pro Pro Leu Thr Phe Gly Gly Gly Thr Arg Val Glu Ile
115 120 125

Lys Arg Thr
130

<210> 57
<211> 22
<212> PRT
<213> Homo sapiens

<400> 57

Met Asp Met Arg Val Leu Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

Leu Arg Gly Ala Arg Cys
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<210> 58
<211> 23
<212> PRT
<213> Homo sapiens

<400> 58

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

Asp Arg Val Thr Ile Thr Cys
20

<210> 59
<211> 11
<212> PRT
<213> Homo sapiens

<400> 59

Arg Ala Ser Gln Asn Ile Tyr Lys Tyr Leu Asn
1 5 10

<210> 60
<211> 15
<212> PRT
<213> Homo sapiens

<400> 60

Trp Tyr Gln Gln Arg Pro Gly Lys Ala Pro Lys Gly Leu Ile Ser
1 5 10 15

<210> 61
<211> 7
<212> PRT
<213> Homo sapiens

<400> 61

Ala Ala Ser Gly Leu Gln Ser
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<210> 62
<211> 32
<212> PRT
<213> Homo sapiens

<400> 62

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Thr Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
20 25 30

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

<400> 63

Gln Gln Ser Tyr Ser Pro Pro Leu Thr
1 5

<210> 64
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<400> 64

Phe Gly Gly Gly Thr Arg Asp Ile Lys
1 5

<210> 65
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<220>
<223> Recombinant kappa light chain variable region

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tccaccatgg acatgagggt cctcgctcag ctcctggggc tcctgctact ctggctccga 120

ggtgccagat gtgacatcca gatgacccag tctccatcct ccctgtctgc atctgtagga 180

gacagagtca ccatcacttg ccgggcgagt cagaacattt acaagtattt aaattggtat 240

cagcagagac cagggaaagc ccctaagggc ctgatctctg ctgcatccgg gttgcaaagt 300

ggggtcccat caaggttcag tggcagtgga tctgggacag atttcactct caccatcacc 360

agtctgcaac ctgaagattt tgcaacttac tactgtcaac agagttacag tccccctctc 420

actttcggcg gagggaccag ggtggagatc aaacgtacgg tggctgcacc atctgtcttc 480

atcttcccgc catctgatga gcagttgaaa tctggaactg cctctgttgt gtgcctgctg 540

aataacttct atcccagaga ggccaaagta cagtggaagg tggataacgc cctccaatcg 600

ggtaactccc aggagagtgt cacagagcag gacagcaagg acagcaccta cagcctcagc 660

agcaccctga cgctgagcaa agcagactac gagaaacaca aagtctacgc ctgcgaagtc 720

acccatcagg gcctgagctc gcccgtcaca aagagcttca acaggggaga gtgttagagg 780

gtctagaggg cccgtttaaa 800

<210> 66
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<220>
<223> Recombinant kappa light chain variable region

<400> 66
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ttgctcagcg tcagggtgct gctgaggctg taggtgctgt ccttgctgtc ctgctctgtg 180

acactctcct gggagttacc cgattggagg gcgttatcca ccttccactg tactttggcc 240

tctctgggat agaagttatt cagcaggcac acaacagagg cagttccaga tttcaactgc 300

tcatcagatg gcgggaagat gaagacagat ggtgcagcca ccgtacgttt gatctccacc 360

ctggtccctc cgccgaaagt gagaggggga ctgtaactct gttgacagta gtaagttgca 420

aaatcttcag gttgcagact ggtgatggtg agagtgaaat ctgtcccaga tccactgcca 480

ctgaaccttg atgggacccc actttgcaac ccggatgcag cagagatcag gcccttaggg 540

gctttccctg gtctctgctg ataccaattt aaatacttgt aaatgttctg actcgcccgg 600

caagtgatgg tgactctgtc tcctacagat gcagacaggg aggatggaga ctgggtcatc 660

tggatgtcac atctggcacc tcggagccag agtagcagga gccccaggag ctgagcgagg 720

accctcatgt ccatggtgga agcttaagtt taaacgctag ccagcttggg tctccctata 780

gtgagtcgta ttaatttcga 800

<210> 67
<211> 427
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain variable region

<400> 67
aagcttccac catgaaacac ctgtggttct tccttctcct ggtggcagct cccagctggg 60

tcctgtccca ggtgcaattg caggagtcgg gcccaggact ggtgaagcct tcggagaccc 120

tgtccctcac ctgcactgtc tctggttcgt ccatcagtaa ttactactgg agctggatcc 180

ggcagtcccc agggaaggga ctggagtgga ttgggtttat ctattacggt ggaaacacca 240

agtacaatcc ctccctcaag agccgcgtca ccatatcaca agacacttcc aagagtcagg 300

tctccctgac gatgagctct gtgaccgctg cggaatcggc cgtctatttc tgtgcgagag 360

cgtcttgtag tggtggttac tgtatccttg actactgggg ccagggaacc ctggtcaccg 420

tctcgag 427

<210> 68

<211> 427
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain variable region.

<400> 68
ctcgagacgg tgaccagggt tccctggccc cagtagtcaa ggatacagta accaccacta 60

caagacgctc tcgcacagaa atagacggcc gattccgcag cggtcacaga gctcatcgtc 120

agggagacct gactcttgga agtgtcttgt gatatggtga cgcggctctt gagggaggga 180

ttgtacttgg tgtttccacc gtaatagata aacccaatcc actccagtcc cttccctggg 240

gactgccgga tccagctcca gtagtaatta ctgatggacg aaccagagac agtgcaggtg 300

agggacaggg tctccgaagg cttcaccagt cctgggcccg actcctgcaa ttgcacctgg 360

gacaggaccc agctgggagc tgccaccagg agaaggaaga accacaggtg tttcatggtg 420

gaagctt 427

<210> 69
<211> 138
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain variable region

<400> 69

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Ser Trp
1 5 10 15

Val Leu Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys
20 25 30

Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ser Ser Ile
35 40 45

Ser Asn Tyr Tyr Trp Ser Trp Ile Arg Gln Ser Pro Gly Lys Gly Leu
50 55 60

Glu Trp Ile Gly Phe Ile Tyr Tyr Gly Gly Asn Thr Lys Tyr Asn Pro
65 70 75 80

Ser Leu Lys Ser Arg Val Thr Ile Ser Gln Asp Thr Ser Lys Ser Gln
85 90 95

Val Ser Leu Thr Met Ser Ser Val Thr Ala Ala Glu Ser Ala Val Tyr
100 105 110

Phe Cys Ala Arg Ala Ser Cys Ser Gly Gly Tyr Cys Ile Leu Asp Tyr
115 120 125

Trp Gly Gln Gly Thr Leu Val Thr Val Ser

130 135

<210> 70
<211> 19
<212> PRT
<213> Homo sapiens

<400> 70

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Ser Trp
1 5 10 15

Val Leu Ser

<210> 71
<211> 30
<212> PRT
<213> Homo sapiens

<400> 71

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 Ser Ser Ile Ser
20 25 30

<210> 72
<211> 5
<212> PRT
<213> Homo sapiens

<400> 72

Asn Tyr Tyr Trp Ser
1 5

<210> 73
<211> 14
<212> PRT
<213> Homo sapiens

<400> 73

Trp Ile Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile Gly
1 5 10

<210> 74
<211> 16
<212> PRT
<213> Homo sapiens

<400> 74

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

<210> 75
<211> 32

<212> PRT
<213> Homo sapiens

<400> 75

Arg Val Thr Ile Ser Gln Asp Thr Ser Lys Ser Gln Val Ser Leu Thr
1 5 10 15

Met Ser Ser Val Thr Ala Ala Glu Ser Ala Val Tyr Phe Cys Ala Arg
20 25 30

<210> 76
<211> 11
<212> PRT
<213> Homo sapiens

<400> 76

Ala Ser Cys Ser Gly Gly Tyr Cys Ile Leu Asp
1 5 10

<210> 77
<211> 11
<212> PRT
<213> Homo sapiens

<400> 77

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

<210> 78
<211> 1557
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain

<400> 78
tggcttatcg aaattaatac gactcactat agggagaccc aagctggcta gcgtttaaac 60

ttaagcttcc accatgaaac acctgtggtt cttccttctc ctggtggcag ctcccagctg 120

ggtcctgtcc caggtgcaat tgcaggagtc gggcccagga ctggtgaagc cttcggagac 180

cctgtccctc acctgcactg tctctggttc gtccatcagt aattactact ggagctggat 240

ccggcagtcc ccagggaagg gactggagtg gattgggttt atctattacg gtggaaacac 300

caagtacaat ccctccctca agagccgcgt caccatatca caagacactt ccaagagtca 360

ggtctccctg acgatgagct ctgtgaccgc tgcggaatcg gccgtctatt tctgtgcgag 420

agcgtcttgt agtggtggtt actgtatcct tgactactgg ggccagggaa ccctggtcac 480

cgtctcgaga gcctccacca agggcccatc ggtcttcccc ctggcaccct cctccaagag 540

cacctctggg ggcacagcgg ccctgggctg cctggtcaag gactacttcc ccgaaccggt 600

gacggtgtcg tggaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct 660

acagtcctca ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg 720

cacccagacc tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagag 780

agttgagccc aaatcttgtg acaaaactca cacatgccca ccgtgcccag cacctgaact 840

cctgggggga ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc 900

ccggacccct gaggtcacat gcgtggtggt ggacgtgagc cacgaagacc ctgaggtcaa 960

gttcaactgg tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga 1020

gcagtacaac agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aggactggct 1080

gaatggcaag gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa 1140

aaccatctcc aaagccaaag ggcagccccg agaaccacag gtgtacaccc tgcccccatc 1200

ccgggaggag atgaccaaga accaggtcag cctgacctgc ctggtcaaag gcttctatcc 1260

cagcgacatc gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac 1320

gcctcccgtg ctggactccg acggctcctt cttcctctat agcaagctca ccgtggacaa 1380

gagcaggtgg cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa 1440

ccactacacg cagaagagcc tctccctgtc tccgggtaaa tgagttctag agggcccgtt 1500

taaacccgct gatcagcctc gactgtgcct tctagttgcc agccatctgt tgtttgc 1557

<210> 79
<211> 1557
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain

<400> 79
gcaaacaaca gatggctggc aactagaagg cacagtcgag gctgatcagc gggtttaaac 60

gggccctcta gaactcattt acccggagac agggagaggc tcttctgcgt gtagtggttg 120

tgcagagcct catgcatcac ggagcatgag aagacgttcc cctgctgcca cctgctcttg 180

tccacggtga gcttgctata gaggaagaag gagccgtcgg agtccagcac gggaggcgtg 240

gtcttgtagt tgttctccgg ctgcccattg ctctcccact ccacggcgat gtcgctggga 300

tagaagcctt tgaccaggca ggtcaggctg acctggttct tggtcatctc ctcccgggat 360

gggggcaggg tgtacacctg tggttctcgg ggctgccctt tggctttgga gatggttttc 420

tcgatggggg ctgggagggc tttgttggag accttgcact tgtactcctt gccattcagc 480

cagtcctggt gcaggacggt gaggacgctg accacacggt acgtgctgtt gtactgctcc 540

tcccgcggct ttgtcttggc attatgcacc tccacgccgt ccacgtacca gttgaacttg 600

acctcagggt cttcgtggct cacgtccacc accacgcatg tgacctcagg ggtccgggag 660

atcatgaggg tgtccttggg ttttgggggg aagaggaaga ctgacggtcc ccccaggagt 720

tcaggtgctg ggcacggtgg gcatgtgtga gttttgtcac aagatttggg ctcaactctc 780

ttgtccacct tggtgttgct gggcttgtga ttcacgttgc agatgtaggt ctgggtgccc 840

aagctgctgg agggcacggt caccacgctg ctgagggagt agagtcctga ggactgtagg 900

acagccggga aggtgtgcac gccgctggtc agggcgcctg agttccacga caccgtcacc 960

ggttcgggga agtagtcctt gaccaggcag cccagggccg ctgtgccccc agaggtgctc 1020

ttggaggagg gtgccagggg gaagaccgat gggcccttgg tggaggctct cgagacggtg 1080

accagggttc cctggcccca gtagtcaagg atacagtaac caccactaca agacgctctc 1140

gcacagaaat agacggccga ttccgcagcg gtcacagagc tcatcgtcag ggagacctga 1200

ctcttggaag tgtcttgtga tatggtgacg cggctcttga gggagggatt gtacttggtg 1260

tttccaccgt aatagataaa cccaatccac tccagtccct tccctgggga ctgccggatc 1320

cagctccagt agtaattact gatggacgaa ccagagacag tgcaggtgag ggacagggtc 1380

tccgaaggct tcaccagtcc tgggcccgac tcctgcaatt gcacctggga caggacccag 1440

ctgggagctg ccaccaggag aaggaagaac cacaggtgtt tcatggtgga agcttaagtt 1500

taaacgctag ccagcttggg tctccctata gtgagtcgta ttaatttcga taagcca 1557

<210> 80
<211> 11
<212> PRT
<213> Homo sapiens

<400> 80

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
1 5 10

<210> 81
<211> 6
<212> DNA
<213> Artificial Sequence

<220>
<223> Restriction site

<400> 81
ctcgag 6

<210> 82
<211> 11
<212> PRT
<213> Homo sapiens

<400> 82

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Arg
1 5 10

<210> 83
<211> 404
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant kappa light chain variable region

<400> 83
aagcttccac catggacatg agggtcctcg ctcagctcct ggggctcctg ctactctggc 60

tccgaggtgc cagatgtgac atccaggtga cccagtctcc atcctccctg tctgcatctg 120

taggagacag agtcaccatc acttgccgcg cgagtcagaa catttacaag tatttaaatt 180

ggtatcagca gagaccaggg aaagccccta agggcctgat ctctgctgca tccgggttgc 240

aaagtggggt cccatcaagg ttcagtggca gtggatctgg gacagatttc actctcacca 300

tcaccagtct gcaacctgaa gattttgcaa cttactactg tcaacagagt tacagtcccc 360

ctctcacttt cggcggaggg accagggtgg atatcaaacg tacg 404

<210> 84
<211> 404
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant kappa light chain variable region

<400> 84
cgtacgtttg atatccaccc tggtccctcc gccgaaagtg agagggggac tgtaactctg 60

ttgacagtag taagttgcaa aatcttcagg ttgcagactg gtgatggtga gagtgaaatc 120

tgtcccagat ccactgccac tgaaccttga tgggacccca ctttgcaacc cggatgcagc 180

agagatcagg cccttagggg ctttccctgg tctctgctga taccaattta aatacttgta 240

aatgttctga ctcgcgcggc aagtgatggt gactctgtct cctacagatg cagacaggga 300

ggatggagac tgggtcacct ggatgtcaca tctggcacct cggagccaga gtagcaggag 360

ccccaggagc tgagcgagga ccctcatgtc catggtggaa gctt 404

<210> 85
<211> 427
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain variable region

<400> 85
aagcttccac catgaaacac ctgtggttct tccttctcct ggtggcagct cccagctggg 60

tcctgtccca ggtgcaattg caggagtcgg gcccaggact ggtgaagcct tcggagaccc 120

tgtccctcac ctgcactgtc tctggttcgt ccatcagtaa ttactactgg agctggatcc 180

ggcagtcccc agggaaggga ctggagtgga ttgggtttat ctattacggt ggaaacacca 240

agtacaatcc ctccctcaag agccgcgtca ccatatcaca agacacttcc aagagtcagg 300

tctccctgac gatgagctct gtgaccgctg cggaatcggc cgtctatttc tgtgcgagag 360

cgtcttgtag tggtggttac tgtatccttg actactgggg ccagggaacc ctggtcaccg 420

tctcgag 427

<210> 86
<211> 427
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain variable region

<400> 86
ctcgagacgg tgaccagggt tccctggccc cagtagtcaa ggatacagta accaccacta 60

caagacgctc tcgcacagaa atagacggcc gattccgcag cggtcacaga gctcatcgtc 120

agggagacct gactcttgga agtgtcttgt gatatggtga cgcggctctt gagggaggga 180

ttgtacttgg tgtttccacc gtaatagata aacccaatcc actccagtcc cttccctggg 240

gactgccgga tccagctcca gtagtaatta ctgatggacg aaccagagac agtgcaggtg 300

agggacaggg tctccgaagg cttcaccagt cctgggcccg actcctgcaa ttgcacctgg 360

gacaggaccc agctgggagc tgccaccagg agaaggaaga accacaggtg tttcatggtg 420

gaagctt 427

<210> 87
<211> 427
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain

<400> 87
aagcttccac catgaaacac ctgtggttct tccttctcct ggtggcagct cccagctggg 60

tcctgtccca ggtgcaattg caggagtcgg gcccaggact ggtgaagcct tcggagaccc 120

tgtccctcac ctgcactgtc tctggttcgt ccatcagtaa ttactactgg agctggatcc 180

ggcagtcccc agggaaggga ctggagtgga ttgggtttat ctattacggt ggaaacacca 240

agtacaatcc ctccctcaag agccgcgtca ccatatcaca agacacttcc aagagtcagg 300

tctccctgac gatgagctct gtgaccgctg cggaatcggc cgtctatttc tgtgcgagag 360

cgtcttgtag tggtggttac tgtatccttg actactgggg ccagggaacc ctggtcaccg 420

tctcgag 427

<210> 88
<211> 401
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant kappa light chain variable region

<400> 88
aagcttccac catggacatg agggtcctcg ctcagctcct ggggctcctg ctactctggc 60

tccgaggtgc cagatgtgac atccagatga cccagtctcc atcctccctg tctgcatctg 120

taggagacag agtcaccatc acttgccgga caagtcagag cattagcagc tatttaaatt 180

ggtatcagca gaaaccaggg aaagccccta aactcctgat ctatgctgca tccagtttgc 240

aaagtggggt cccatcaagg ttcagtggca gtggatctgg gacagatttc actctcacca 300

tcagcggtct gcaacctgaa gattttgcaa cctactactg tcaacagagt tacagtatgc 360

ctgcctttgg ccaggggacc aagctggaga tcaaacgtac g 401

<210> 89
<211> 401
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant kappa light chain variable region.

<400> 89
cgtacgtttg atctccagct tggtcccctg gccaaaggca ggcatactgt aactctgttg 60

acagtagtag gttgcaaaat cttcaggttg cagaccgctg atggtgagag tgaaatctgt 120

cccagatcca ctgccactga accttgatgg gaccccactt tgcaaactgg atgcagcata 180

gatcaggagt ttaggggctt tccctggttt ctgctgatac caatttaaat agctgctaat 240

gctctgactt gtccggcaag tgatggtgac tctgtctcct acagatgcag acagggagga 300

tggagactgg gtcatctgga tgtcacatct ggcacctcgg agccagagta gcaggagccc 360

caggagctga gcgaggaccc tcatgtccat ggtggaagct t 401

<210> 90
<211> 401
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant kappa light chain variable region

<400> 90
aagcttccac catggacatg agggtcctcg ctcagctcct ggggctcctg ctactctggc 60

tccgaggtgc cagatgtgac atccagatga cccagtctcc atcctccctg tctgcatctg 120

taggagacag agtcaccatc acttgccgga caagtcagag cattagcagc tatttaaatt 180

ggtatcagca gaaaccaggg aaagccccta aactcctgat ctatgctgca tccagtttgc 240

aaagtggggt cccatcaagg ttcagtggca gtggatctgg gacagatttc actctcacca 300

tcagcggtct gcaacctgaa gattttgcaa cctactactg tcaacagagt tacagtatgc 360

ctgcctttgg ccaggggacc aagctggaga tcaaacgtac g 401

<210> 91
<211> 130
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant kappa light chain

<400> 91

Met Asp Met Arg Val Leu Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

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

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Thr Ser
35 40 45

Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys
50 55 60

Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val
65 70 75 80

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
85 90 95

Ile Ser Gly Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
100 105 110

Ser Tyr Ser Met Pro Ala Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
115 120 125

Arg Thr
130

<210> 92
<211> 11
<212> PRT
<213> Homo sapiens

<400> 92

Arg Thr Ser Gln Ser Ile Ser Ser Tyr Leu Asn
1 5 10

<210> 93
<211> 15
<212> PRT
<213> Homo sapiens

<400> 93

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 94
<211> 13
<212> PRT
<213> Homo sapiens

<400> 94

Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe
1 5 10

<210> 95
<211> 26
<212> PRT
<213> Homo sapiens

<400> 95

Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Gly Leu
1 5 10 15

Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
20 25

<210> 96
<211> 8
<212> PRT
<213> Homo sapiens

<400> 96

Gln Gln Ser Tyr Ser Met Pro Ala
1 5

<210> 97
<211> 427
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain variable region

<400> 97
aagcttccac catggagttg gggctgtgct gggttttcct tgttgctatt ttaaaaggtg 60

tccagtgtga ggtgcagctg gtggagtctg ggggaggctt ggtccagcct gggggtccc 120

tgagaatctc ctgtgcagcc tctggattca ccgtcagtag caactacatg agttgggtcc 180

gccaggctcc agggaagggg ctggagtggg tctcagttat ttatagtggt ggtagcacat 240

actacgcaga ctccgtgaag ggcagattct ccttctccag agacaactcc aagaacacag 300

tgtttcttca aatgaacagc ctgagagccg aggacacggc tgtgtattac tgtgcgagat 360

gtctgagcag gatgcggggt tacggtttag acgtctgggg ccaagggacc acggtcaccg 420

tctcgag 427

<210> 98
<211> 427
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain variable region

<400> 98
ctcgagacgg tgaccgtggt cccttggccc cagacgtcta aaccgtaacc ccgcatcctg 60

ctcagacatc tcgcacagta atacacagcc gtgtcctcgg ctctcaggct gttcatttga 120

agaaacactg tgttcttgga gttgtctctg gagaaggaga atctgccctt cacggagtct 180

gcgtagtatg tgctaccacc actataaata actgagaccc actccagccc cttccctgga 240

gcctggcgga cccaactcat gtagttgcta ctgacggtga atccagaggc tgcacaggag 300

attctcaggg acccccccagg ctggaccaag cctcccccag actccaccag ctgcacctca 360

cactggacac cttttaaaat agcaacaagg aaaacccagc acagccccaa ctccatggtg 420

gaagctt 427

<210> 99
<211> 427
<212> DNA
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain variable region

<400> 99
aagcttccac catggagttg gggctgtgct gggttttcct tgttgctatt ttaaaaggtg 60

tccagtgtga ggtgcagctg gtggagtctg ggggaggctt ggtccagcct gggggtccc 120

tgagaatctc ctgtgcagcc tctggattca ccgtcagtag caactacatg agttgggtcc 180

gccaggctcc agggaagggg ctggagtggg tctcagttat ttatagtggt ggtagcacat 240

actacgcaga ctccgtgaag ggcagattct ccttctccag agacaactcc aagaacacag 300

tgtttcttca aatgaacagc ctgagagccg aggacacggc tgtgtattac tgtgcgagat 360

gtctgagcag gatgcggggt tacggtttag acgtctgggg ccaagggacc acggtcaccg 420

tctcgag 427

<210> 100
<211> 138
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant gamma heavy chain variable region

<400> 100

Met Glu Leu Gly Leu Cys Trp Val Phe Leu Val Ala Ile Leu Lys Gly
1 5 10 15

Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
20 25 30

Pro Gly Gly Ser Leu Arg Ile Ser Cys Ala Ala Ser Gly Phe Thr Val
35 40 45

Ser Ser Asn Tyr Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60

Glu Trp Val Ser Val Ile Tyr Ser Gly Gly Ser Thr Tyr Tyr Ala Asp
65 70 75 80

Ser Val Lys Gly Arg Phe Ser Phe Ser Arg Asp Asn Ser Lys Asn Thr
85 90 95

Val Phe Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr
100 105 110

Tyr Cys Ala Arg Cys Leu Ser Arg Met Arg Gly Tyr Gly Leu Asp Val
115 120 125

Trp Gly Gln Gly Thr Thr Val Thr Val Ser
130 135

<210> 101
<211> 19
<212> PRT
<213> Homo sapiens

<400> 101

Met Glu Leu Gly Leu Cys Trp Val Phe Leu Val Ala Ile Leu Lys Gly
1 5 10 15

Val Gln Cys

<210> 102
<211> 30
<212> PRT
<213> Homo sapiens

<400> 102

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

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

<210> 103
<211> 5
<212> PRT
<213> Homo sapiens

<400> 103

Ser Asn Tyr Met Ser
1 5

<210> 104
<211> 14
<212> PRT
<213> Homo sapiens

<400> 104

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

<210> 105
<211> 15
<212> PRT
<213> Homo sapiens

<400> 105

Val Ile Tyr Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys

1 5 10 15

<210> 106
<211> 33
<212> PRT
<213> Homo sapiens

<400> 106

Gly Arg Phe Ser Phe Ser Arg Asp Asn Ser Lys Asn Thr Val Phe Leu
1 5 10 15

Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala
20 25 30

Arg

<210> 107
<211> 12
<212> PRT
<213> Homo sapiens

<400> 107

Cys Leu Ser Arg Met Arg Gly Tyr Gly Leu Asp Val
1 5 10

<210> 108
<211> 10
<212> PRT
<213> Homo sapiens

<400> 108

Trp Gly Gln Gly Thr Thr Val Thr Val Ser
1 5 10

<210> 109
<211> 6
<212> PRT
<213> Homo sapiens

<400> 109

Gly Ser Ser Ile Ser Asn
1 5

<210> 110
<211> 9
<212> PRT
<213> Homo sapiens

<400> 110

Phe Ile Tyr Tyr Gly Gly Asn Thr Lys
1 5

<210> 111
<211> 11

<212> PRT
<213> Homo sapiens

<400> 111

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
1 5 10

<210> 112
<211> 7
<212> PRT
<213> Homo sapiens

<400> 112

Gly Phe Thr Val Ser Ser Asn
1 5

<210> 113
<211> 9
<212> PRT
<213> Homo sapiens

<400> 113

Val Ile Tyr Ser Gly Gly Ser Thr Tyr
1 5

<210> 114
<211> 10
<212> PRT
<213> Homo sapiens

<400> 114

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
1 5 10

<210> 115
<211> 366
<212> DNA
<213> Homo sapiens

<400> 115
caggtgcagc tgcagcagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60

acttgcactg tctctggtgg ccccgtcagc ggtggtggtt actcctggaa ctggatccgc 120

caacgcccag gacagggcct ggagtgggtt gggttcatgt ttcacagtgg gagtccccgc 180

tacaatccga ccctcaagag tcgaattacc atctcagtcg acacgtctaa gaacctggtc 240

tccctgaagc tgagctctgt gacggccgcg gacacggccg tgtatttttg tgcgcgagtg 300

gggcagatgg acaagtacta tgccatggac gtctggggcc aagggaccac ggtcaccgtc 360

tcgagc 366

<210> 116
<211> 122
<212> PRT
<213> Homo sapiens

<400> 116

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

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

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

Trp Val Gly Phe Met Phe His Ser Gly Ser Pro Arg Tyr Asn Pro Thr
50 55 60

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

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

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

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

<210> 117
<211> 323
<212> DNA
<213> Homo sapiens

<400> 117
gacatccaga tgacccagtc tccatcctcc ctgtcttcct ctgtcggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattggc gcctatgtaa attggtatca acagaaagca 120

gggaaagccc cccaggtcct gatctttggt gcttccaatt tacaaagcgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagactttg caacttactt ctgtcaacag acttacagta ccccgatcac cttcggccaa 300

gggacacgac tggagattaa acg 323

<210> 118
<211> 107
<212> PRT
<213> Homo sapiens

<400> 118

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

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

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

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

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

<210> 119
<211> 363
<212> DNA
<213> Homo sapiens

<400> 119
caggtccagc tgcaggagtc gggcccagga ctgctgaagc cttcggacac cctggccctc 60

acttgcactg tctctggtgg ctccatcacc agtgactact ggagctggat ccggcaaccc 120

ccagggaggg gactggactg gatcggattc ttctataacg gcggaagcac caagtacaat 180

ccctccctca agagtcgagt caccatttca gcggacacgt ccaagaacca gttgtccctg 240

aaattgacct ctgtgaccgc cgcagacacg ggcgtgtatt attgtgcgag acatgatgcc 300

aaatttagtg ggagctacta cgttgcctcc tggggccagg gaacccgagt caccgtctcg 360

agc 363

<210> 120
<211> 121
<212> PRT
<213> Homo sapiens

<400> 120

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

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

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Arg Gly Leu Asp Trp Ile
35 40 45

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

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

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

Arg His Asp Ala Lys Phe Ser Gly Ser Tyr Tyr Val Ala Ser Trp Gly
100 105 110

Gln Gly Thr Arg Val Thr Val Ser Ser
115 120

<210> 121
<211> 323
<212> DNA
<213> Homo sapiens

<400> 121
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atctcttgcc gggcaagtca gagcattagc acctatttaa attggtatca gcagcaacct 120

gggaaagccc ctaaggtcct cattttggt gcaaccaact tgcaaagtgg ggtcccatct 180

cgcttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcaacag agttacaata ccccctcat ttttggccag 300

gggaccaagc tggagatcaa acg 323

<210> 122
<211> 107
<212> PRT
<213> Homo sapiens

<400> 122

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

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

Phe Gly Ala Thr Asn 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 Asn Thr Pro Leu
85 90 95

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

<210> 123
<211> 363

<212> DNA
<213> Homo sapiens

<400> 123
caggtccagc tgcaggagtc gggcccagga ctgctgaagc cttcggacac cctggccctc 60

acttgcactg tctctggtgg ctccatcacc agtgactact ggagctggat ccggcaaccc 120

ccagggaggg gactggactg gatcggattc ttctataacg gcgggagcac caagtacaat 180

ccctccctca agagtcgagt caccatatca gcggacacgt ccaagaacca gttgtccctg 240

aaattgacct ctgtgaccgc cgcagacacg ggcgtgtatt attgtgcgag acatgatgtc 300

aaatttagtg ggagctacta cgttgcctcc tggggccagg gaacccgagt caccgtctcg 360

agc 363

<210> 124
<211> 121
<212> PRT
<213> Homo sapiens

<400> 124

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

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

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Arg Gly Leu Asp Trp Ile
35 40 45

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

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

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

Arg His Asp Val Lys Phe Ser Gly Ser Tyr Tyr Val Ala Ser Trp Gly
100 105 110

Gln Gly Thr Arg Val Thr Val Ser Ser
115 120

<210> 125
<211> 323
<212> DNA
<213> Homo sapiens

<400> 125
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atctcttgcc gggcaagtca gagcattagc acctatttaa attggtatca gcagcaacct 120

gggaaagccc ctaaggtcct gatctctggt gcaaccaact tgcaaagtgg ggtcccatct 180

cgcttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcaacag agttacaata ccccccctcat ttttggccag 300

gggaccaagc tggagatcaa acg 323

<210> 126
<211> 107
<212> PRT
<213> Homo sapiens

<400> 126

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

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

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

Ser Gly Ala Thr Asn 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 Asn Thr Pro Leu
85 90 95

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

<210> 127
<211> 360
<212> DNA
<213> Homo sapiens

<400> 127
caggtgcagc tgcaggagtc gggcccacga gtggtgaggc cttcggagac cctgtccctc 60

acctgcactg tctcgggggg ctccatcagt tcttacaact ggatttggat ccggcagccc 120

cctgggaagg gactggagtg gattgggcac atatatgact atgggaggac cttctacaac 180

tcctccctcc agagtcgacc taccatatct gtagacgcgt ccaagaatca gctctccctg 240

cgattgacct ctgtgaccgc ctcagacacg gccgtctatt actgtgcgag acctctcggt 300

atactccact actacgcgat ggacctctgg ggccaaggga ccacggtcac cgtctcgagc 360

<210> 128
<211> 120
<212> PRT
<213> Homo sapiens

<400> 128

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

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

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

Gly His Ile Tyr Asp Tyr Gly Arg Thr Phe Tyr Asn Ser Ser Leu Gln
50 55 60

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

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

Arg Pro Leu Gly Ile Leu His Tyr Tyr Ala Met Asp Leu Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 129
<211> 320
<212> DNA
<213> Homo sapiens

<400> 129
gacatccaga tgacccagtc tccattatcc gtgtctgtat ctgtcgggga cagggtcacc 60

atcgcttgcc gggcaagtca gagtattgac aagtttttaa attggtatca gcagaaacca 120

gggaaagccc ctaaactcct gatctatggt gcctccaatt tgcacagtgg ggccccatca 180

aggttcagtg ccagtgggtc tgggacagac ttcactctaa caatcaccaa tatacagact 240

gaagatttcg caacttacct ctgtcaacag agtttcagtg tccccgcttt cggcggaggg 300

accaaggttg agatcaaacg 320

<210> 130
<211> 106
<212> PRT
<213> Homo sapiens

<400> 130

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

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

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

Tyr Gly Ala Ser Asn Leu His Ser Gly Ala Pro Ser Arg Phe Ser Ala
50 55 60

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

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

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

<210> 131
<211> 354
<212> DNA
<213> Homo sapiens

<400> 131
gaggtgcaac tggtggagtc tggaggggc ttggtccagc ctgggggtc cctgagactc 60

tcctgtacgg cctctgggtt aagtgtcagt tccacctaca tgaactgggt ccgccaggct 120

ccagggaagg ggctggaatg ggtctcagtt ttttatagtg agaccaggac gtactacgca 180

gactccgtga agggccgatt caccgtctcc agacacaatt ccaacaacac gctctatctt 240

cagatgaaca gcctgagagt tgaagacacg gccgtgtatt attgtgcgag agtccagaga 300

ttgtcgtacg gtatggacgt ctggggccaa gggaccacgg tcaccgtctc gagc 354

<210> 132
<211> 118
<212> PRT
<213> Homo sapiens

<400> 132

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 Thr Ala Ser Gly Leu Ser Val Ser Ser Thr
20 25 30

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

Ser Val Phe Tyr Ser Glu Thr Arg Thr Tyr Tyr Ala Asp Ser Val Lys
50 55 60

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

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

Arg Val Gln Arg Leu Ser Tyr Gly Met Asp Val Trp Gly Gln Gly Thr
100 105 110

Thr Val Thr Val Ser Ser
115

<210> 133
<211> 320
<212> DNA
<213> Homo sapiens

<400> 133
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgttggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattagc acctatttaa attggtatca gaagagacca 120

gggaaagccc ctaaactcct ggtctatggt gcatccactt tgcagagtgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcgccag tctgcaacct 240

gaagattctg caacttacta ctgtcaacag acttacagta tccccctctt cggccagggg 300

acacggctgg agattaaacg 320

<210> 134
<211> 106
<212> PRT
<213> Homo sapiens

<400> 134

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

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

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

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

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

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

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

<210> 135
<211> 354
<212> DNA
<213> Homo sapiens

<400> 135
gaggtgcagc tggtggaatc tggaggggc ttggtccagc ctgggggtc cctgagactc 60

tcctgtacag cctctgggtt aagcgtcagt tccacctaca tgaactgggt ccgccaggct 120

ccagggaagg ggctggaatg ggtctcagtt ttttatagtg aaaccaggac gtattacgca 180

gactccgtga agggccgatt caccgtctcc agacacaatt ccaacaacac gctgtatctt 240

caaatgaaca gcctgagagc tgaagacacg gccgtgtatt attgtgcgag agtccagaga 300

ctgtcatacg gtatggacgt ctggggccaa gggaccacgg tcaccgtctc gagc 354

<210> 136
<211> 118
<212> PRT
<213> Homo sapiens

<400> 136

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 Thr Ala Ser Gly Leu Ser Val Ser Ser Thr
20 25 30

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

Ser Val Phe Tyr Ser Glu Thr Arg Thr Tyr Tyr Ala Asp Ser Val Lys
50 55 60

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

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

Arg Val Gln Arg Leu Ser Tyr Gly Met Asp Val Trp Gly Gln Gly Thr
100 105 110

Thr Val Thr Val Ser Ser
115

<210> 137
<211> 320
<212> DNA
<213> Homo sapiens

<400> 137
gacatccaga tgacccagtc tccatcgtcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattagc acctatttaa attggtatca gaagagacca 120

gggaaagccc ctaaactcct ggtctatggt gcatccagtt tgcagagtgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcgccag tctgcaacct 240

gaagattctg cagtttatta ctgtcaacag acttacagta tccccctctt cggccagggg 300

acacgactgg agattaaacg 320

<210> 138
<211> 106
<212> PRT
<213> Homo sapiens

<400> 138

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

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

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

Tyr Gly 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 Ala Ser Leu Gln Pro
65 70 75 80

Glu Asp Ser Ala Val Tyr Tyr Cys Gln Gln Thr Tyr Ser Ile Pro Leu
85 90 95

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

<210> 139
<211> 360
<212> DNA
<213> Homo sapiens

<400> 139
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cctcggagac cctgtccctc 60

acctgcagtg tctctggtgg ctccattagt agtgatttct ggagttggat ccgacagccc 120

ccagggaagg gactggagtg gattgggtat gtctataaca gagggagcac taagtacagt 180

ccctccctca agagtcgagt caccatatca gcagacatgt ccaagaacca gttttccctg 240

aatatgagtt ctgtgaccgc tgcggacacg gccgtgtatt actgtgcgaa aaatggtcga 300

agtagcacca gttggggcat cgacgtctgg ggcaaaggga ccacggtcac cgtctcgagc 360

<210> 140
<211> 120
<212> PRT
<213> Homo sapiens

<400> 140

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 Ser Val Ser Gly Gly Ser Ile Ser Ser Asp
            20                  25                  30

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

Gly Tyr Val Tyr Asn Arg Gly Ser Thr Lys Tyr Ser Pro Ser Leu Lys
    50                  55                  60

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

Asn Met Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
                85                  90                  95

Lys Asn Gly Arg Ser Ser Thr Ser Trp Gly Ile Asp Val Trp Gly Lys
            100                 105                 110

Gly Thr Thr Val Thr Val Ser Ser
        115                 120
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<210> 141
<211> 323
<212> DNA
<213> Homo sapiens

<400> 141
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtgggaga cagactcacc 60

atcacttgcc gggcaagtca gagcattagc acctatttac attggtatca gcagaaacca 120

gggaaagccc ctaaactcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180

aggttcagtg gcagtagatc aggaacagat ttcactctca ccatcagcag tctgcaacct 240

gatgactttg caacttacta ctgtcaacag agttacagtc ccccccctcac tttcggccct 300

gggaccaaag tggatatgaa acg 323

<210> 142
<211> 107
<212> PRT
<213> Homo sapiens

<400> 142

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

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

Leu His 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 Arg 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 Ser Tyr Ser Pro Pro Leu
85 90 95

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

<210> 143
<211> 357
<212> DNA
<213> Homo sapiens

<400> 143
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60

acctgcactg tctctggtgc ctccatcagt agtgactact ggagctggat ccggctgccc 120

ccagggaagg gactggagtg gattgggtat atctataata gagggagtac caagtacacc 180

ccctccctga agagtcgagt caccatatca ctagacacgg ccgagaacca gttctccctg 240

aggctgaggt cggtgaccgc cgcagacacg gccatctatt actgtgcgag acatgtaggt 300

ggccacacct atggaattga ttactggggc cagggaaccc tggtcaccgt ctcgagc 357

<210> 144
<211> 119
<212> PRT
<213> Homo sapiens

<400> 144

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 Ala Ser Ile Ser Ser Asp
20 25 30

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

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

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

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

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

Thr Leu Val Thr Val Ser Ser
        115

<210> 145
<211> 323
<212> DNA
<213> Homo sapiens

<400> 145
gacatccaga tgacccagtc tccatcgtcc ctgtctgcct ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattagc aactatttaa attggtatca acacaaacct 120

ggggaagccc ccaagctcct gaactatgct gcgtccagtt tgcaaagtgg ggtcccatca 180

aggttcagtg ccagtggatc tgggacagat ttcactctca ccatcagcag tcttcaacct 240

gaagattttg ccacttacta ctgtcaacag agttacaata ctccgatcac cttcggccaa 300

gggacacgac tggaaattaa acg 323

<210> 146
<211> 107
<212> PRT
<213> Homo sapiens

<400> 146

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 Asn Tyr
            20   25   30

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

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Ala
    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 Asn Thr Pro Ile
                85   90   95

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

<210> 147
<211> 357
<212> DNA
<213> Homo sapiens

<400> 147
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60

acctgcactg tctctggtgc ctccatcagt agtgactact ggagctggat ccggctgccc 120

ccagggaagg gactggagtg gattgggtat atctataata gagggagtac caagtacacc 180

ccctccctga agagtcgagt caccatatca ctagacacgg ccgagaacca gttctccctg 240

aggctgaggt cggtgaccgc cgcagacacg gccgtctatt actgtgcgag acatgtgggt 300

ggccacacct atggaattga ttactggggc cagggaaccc tggtcaccgt ctcgagc 357

<210> 148
<211> 119
<212> PRT
<213> Homo sapiens

<400> 148

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 Ala Ser Ile Ser Ser Asp
20 25 30

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

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

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

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

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

Thr Leu Val Thr Val Ser Ser
115

<210> 149
<211> 323
<212> DNA
<213> Homo sapiens

<400> 149
gacatccaga tgacccagtc tccatcgtcc ctgtctgcct ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattagc aactatttaa attggtatca acacaaacct 120

ggggaagccc ccaagctcct gaactatgct gcgtccagtt tgcaaagtgg ggtcccatca 180

aggttcagtg ccagtggatc tgggacagat ttcactctca gcatcagcgg tcttcaacct 240

gaagattttg ccacttacta ctgtcaacag agctacaata ctccgatcac cttcggccca 300

gggacacgac tggaaattaa acg 323

<210> 150
<211> 107
<212> PRT
<213> Homo sapiens

<400> 150

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 Asn Tyr
20 25 30

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

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

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

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

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

<210> 151
<211> 363
<212> DNA
<213> Homo sapiens

<400> 151
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccgtc 60

acctgcaaag tctctggtga ctccatcagt agttattcct ggagctggat ccggcagccc 120

ccagggaagg gactggagtg ggttggctat ttgtattata gtgggagcac caagtacaac 180

ccctccctca agagtcgaac caccatatca gtagacacgt ccacgaacca gttgtccctg 240

aagttgagtt ttgtgaccgc cgcggacacg gccgtgtatt tctgtgcgag aaccggctcg 300

gaatctacta ccggctacgg tatggacgtc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 152
<211> 121
<212> PRT
<213> Homo sapiens

<400> 152

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

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

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

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

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

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

Arg Thr Gly Ser Glu Ser Thr Thr Gly Tyr Gly Met Asp Val Trp Gly
            100                 105                 110

Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 153
<211> 323
<212> DNA
<213> Homo sapiens

<400> 153

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gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc       60

atcacttgcc gggcaagtca gagcattagc acctatttaa attggtatca gcagaaacca      120

gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcacagtgg ggtcccatca      180

aggttcagtg gcagtggatc tgggacagat ttcgctctca ccatcagcag tctgcaacct      240

gaagattttg caacttacta ctgtcaacag agttacagtc ccccgatcac cttcggccaa      300

gggacacgac tggagattaa acg                                              323
```

<210> 154
<211> 107
<212> PRT
<213> Homo sapiens

<400> 154

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

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

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

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

Ser Gly Ser Gly Thr Asp Phe Ala 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 Pro Pro Ile
85 90 95

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

<210> 155
<211> 357
<212> DNA
<213> Homo sapiens

<400> 155
caggtgcagc tgcaggagtc gggcccaaga ctggtgaagc cttcggagag cctgtccctc 60

acctgcactg tctctggtgg ctccattagt aattccttct ggggctggat ccggcagccc 120

ccaggggagg gactggagtg gattggttat gtctataaca gtggcaacac caagtacaat 180

ccctccctca agagtcgagt caccatttcg cgcgacacgt ccaagagtca actctacatg 240

aagctgaggt ctgtgaccgc cgctgacacg gccgtgtact actgtgcgag gcatgacgac 300

gcaagtcatg gctacagcat ctcctggggc cacggaaccc tggtcaccgt ctcgagc 357

<210> 156
<211> 119
<212> PRT
<213> Homo sapiens

<400> 156

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

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

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

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

Ser Arg Val Thr Ile Ser Arg Asp Thr Ser Lys Ser Gln Leu Tyr Met
65 70 75 80

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

Arg His Asp Asp Ala Ser His Gly Tyr Ser Ile Ser Trp Gly His Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
        115

<210> 157
<211> 321
<212> DNA
<213> Homo sapiens

<400> 157
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtagggga cagagtcacc 60

atcacttgcc gggcaagtca gaccattagt acttatttaa attggtatca acagaaatca 120

gggaaagccc ctaagctcct gatctatgct gcatccggtt tgcaaagtgg agtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tcttcaacct 240

gaagattttg caacttactt ctgtcaacag agttacaata ctcccctgac gttcggccaa 300

gggaccaagg tggaaatcaa a 321

<210> 158
<211> 107
<212> PRT
<213> Homo sapiens

<400> 158

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 Thr Ile Ser Thr Tyr
            20   25   30

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

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

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

<210> 159
<211> 360
<212> DNA
<213> Homo sapiens

<400> 159
caggtgcaac tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60

acctgcactg tctcgggtgg ctccatcagt gcttaccact ggagctggat ccgccagccc 120

ccagggaagg gactggagtg gattgggcac atctttgaca gtgggagcac ttactacaac 180

ccctccctta agagtcgagt caccatatca ctagacgcgt ccaagaacca gctctccctg 240

agattgacct ctgtgaccgc ctcagacacg gccatatatt actgtgcgag acctctcggg 300

agtcggtact attacggaat ggacgtctgg ggccaaggga ccacggtcac cgtctcgagc 360

<210> 160
<211> 120
<212> PRT
<213> Homo sapiens

<400> 160

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 Ala Tyr
20 25 30

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

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

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

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

Arg Pro Leu Gly Ser Arg Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 161
<211> 318
<212> DNA
<213> Homo sapiens

<400> 161
gacatccaga tgacccagtc tccgtcctcc ctgtctgcat ctgtcggaga cagagtcacc 60

atcacttgcc gggcaagtca gagtattagc aggtatttaa attggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatctatggt gcctccactt tgcaaaatgg ggccccatca 180

aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag tctacaacct 240

gaagattccg caacttacct ctgtcaacag agttacagtg tccctgcttt cggcggagga 300

accaaggtgg aggtcaaa 318

<210> 162

<211> 106
<212> PRT
<213> Homo sapiens

<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 Arg Tyr
20 25 30

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

Tyr Gly Ala Ser Thr Leu Gln Asn Gly Ala 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 Ser Ala Thr Tyr Leu Cys Gln Gln Ser Tyr Ser Val Pro Ala
85 90 95

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

<210> 163
<211> 363
<212> DNA
<213> Homo sapiens

<400> 163
caggtccagc tgcaggagtc gggcccagga ctgctgaagc cttcggacac cctggccctc 60

acttgcactg tctctggtgg ctccatcacc agtgactact ggagctggat ccggcaaccc 120

ccagggaggg gactggactg gatcggattc ttctataacg gcgggagcac caagtacaat 180

ccctccctca agagtcgagt caccatatca gcggacacgt ccaagaacca gttgtccctg 240

aaattgacct ctgtgaccgc cgcagacacg ggcgtgtatt attgtgcgag acatgatgcc 300

aaatttagtg ggagctacta cgttgcctcc tggggccagg gaacccgagt caccgtctcg 360

agc 363

<210> 164
<211> 121
<212> PRT
<213> Homo sapiens

<400> 164

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

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

```
Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Arg Gly Leu Asp Trp Ile
        35                  40                  45

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

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

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

Arg His Asp Ala Lys Phe Ser Gly Ser Tyr Tyr Val Ala Ser Trp Gly
            100                 105                 110

Gln Gly Thr Arg Val Thr Val Ser Ser
        115                 120
```

<210> 165
<211> 321
<212> DNA
<213> Homo sapiens

<400> 165

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gacatccaga tgacccagtc tccctcctcc ctgtctgcat ctgtaggaga cagagtcacc       60

atctcttgcc gggcaagtca gagcattagc acctatttaa attggtatca gcagcaacct      120

gggaaagccc ctaaggtcct gatctctggt gcaaccgact tgcaaagtgg ggtcccatct      180

cgcttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct      240

gaagattttg caacttacta ctgtcaacag agttacaata ccccctcat ttttggccag      300

gggaccaagc tggagatcaa a                                                321
```

<210> 166
<211> 107
<212> PRT
<213> Homo sapiens

<400> 166

```
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 Ser Cys Arg Ala Ser Gln Ser Ile Ser Thr Tyr
            20                  25                  30

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

Ser Gly Ala Thr Asp 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 Asn Thr Pro Leu
85 90 95

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

<210> 167
<211> 354
<212> DNA
<213> Homo sapiens

<400> 167
gacatgcagc tggtggagtc tggaggaggc ttggtcccgc cgggggggtc cctgagactc 60

tcctgcgcag cctctgggtt ttccgtcagt gacaactaca taaactgggt ccgccaggct 120

ccagggaagg ggctggactg ggtctcagtc ttttatagtg ctgatagaac atcctacgca 180

gactccgtga agggccgatt caccgtctcc agccacgatt ccaagaacac agtgtacctt 240

caaatgaaca gtctgagagc tgaggacacg gccgtttatt actgtgcgag agttcagaag 300

tcctattacg gtatggacgt ctggggccaa gggaccacgg tcaccgtctc gagc 354

<210> 168
<211> 118
<212> PRT
<213> Homo sapiens

<400> 168

Asp Met Gln Leu Val Glu Ser Gly Gly Gly Leu Val Pro Pro Gly Gly
1 5 10 15

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

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

Ser Val Phe Tyr Ser Ala Asp Arg Thr Ser Tyr Ala Asp Ser Val Lys
50 55 60

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

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

Arg Val Gln Lys Ser Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr
100 105 110

Thr Val Thr Val Ser Ser
115

<210> 169
<211> 318
<212> DNA
<213> Homo sapiens

<400> 169
ggcatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattagc agatatttaa attggtatct gcagaaacca 120

gggaaagccc ctaagctcct gatctctggt gcatccagtt tgcaaagtgg ggtcccatca 180

aggttcagtg gcactgggtc tgggacagaa ttcactctca ccatcagcag tttgcaacct 240

gaagattttg caacttacta ctgtcaacag actttcagta tccctctttt tggccagggg 300

accaaggtgg agatcaaa 318

<210> 170
<211> 106
<212> PRT
<213> Homo sapiens

<400> 170

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

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

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

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

Thr 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 Thr Phe Ser Ile Pro Leu
85 90 95

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

<210> 171
<211> 369
<212> DNA
<213> Homo sapiens

<400> 171
caggtgcagc tgcaggcgtc gggcccagga ctggtgaagc cttcagagac cctgtccctc 60

acctgcactg tctctggtga ctccatcacc agtggtgctt actactggac ctggatccgc 120

cagcacccag ggaagggcct ggagtggatt gggtacatct attacagtgg gaacacctac 180

tacaacccgt ccctcaagag tcgagttacc atatcactag acacgtctaa gaaccagttc 240

tccctgaagg tgaactctgt gactgccgcg gacacggccg tatattactg tgcgcgagct 300

gcttcgactt cagtgctagg atacggtatg gacgtctggg gccaagggac cacggtcacc 360

gtctcgagc 369

<210> 172
<211> 123
<212> PRT
<213> Homo sapiens

<400> 172

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

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

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

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

Cys Ala Arg Ala Ala Ser Thr Ser Val Leu Gly Tyr Gly Met Asp Val
100 105 110

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

<210> 173
<211> 321
<212> DNA
<213> Homo sapiens

<400> 173
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattagc agatatttaa attggtatca gcaggaacca 120

gggaaggccc ctaagctcct ggtctatgct gcatccagtt tgcaaagtgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccataagcag tcttcaacct 240

gaagattttg caacttacta ctgtcaacag agttatagta ccccccctcac cttcggccaa 300

gggacacgac tggagattaa a 321

<210> 174

<211> 107
<212> PRT
<213> Homo sapiens

<400> 174

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

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

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

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

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

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

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

<210> 175
<211> 354
<212> DNA
<213> Homo sapiens

<400> 175
gacatgcagc tggtggagtc tggaggaggc ttggtcccgc cgggggggtc cctgagactc 60

tcctgcgcag cctctgggtt ttccgtcagt gacaactaca taaactgggt ccgccaggct 120

ccagggaagg ggctggactg ggtctcagtc ttttatagtg ctgatagaac atcctacgca 180

gactccgtga agggccgatt caccgtctcc agccacgatt ccaagaacac agtgtacctt 240

caaatgaaca gtctgagagc tgaggacacg gccgtttatt actgtgcgag agttcagaag 300

tcctattacg gtatggacgt ctggggccaa gggaccacgg tcaccgtctc gagc 354

<210> 176
<211> 118
<212> PRT
<213> Homo sapiens

<400> 176

Asp Met Gln Leu Val Glu Ser Gly Gly Gly Leu Val Pro Pro Gly Gly
1 5 10 15

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

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

Ser Val Phe Tyr Ser Ala Asp Arg Thr Ser Tyr Ala Asp Ser Val Lys
50 55 60

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

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

Arg Val Gln Lys Ser Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr
100 105 110

Thr Val Thr Val Ser Ser
115

<210> 177
<211> 318
<212> DNA
<213> Homo sapiens

<400> 177
ggcatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattagc agatatttaa attggtatct gcagaaacca 120

gggaaagccc ctaagctcct gatctctggt gcatccagtt tgcaaagtgg ggtcccatca 180

aggttcagtg gcactgggtc tgggacagaa ttcactctca ccatcagcag tttgcaacct 240

gaagattttg caacttacta ctgtcaacag actttcagta tccctctttt tggccagggg 300

accaaggtgg agatcaaa 318

<210> 178
<211> 106
<212> PRT
<213> Homo sapiens

<400> 178

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

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

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

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

Thr 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 Thr Phe Ser Ile Pro Leu
85 90 95

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

<210> 179
<211> 7
<212> PRT
<213> Homo sapiens

<400> 179

Gly Gly Gly Tyr Ser Trp Asn
1 5

<210> 180
<211> 16
<212> PRT
<213> Homo sapiens

<400> 180

Phe Met Phe His Ser Gly Ser Pro Arg Tyr Asn Pro Thr Leu Lys Ser
1 5 10 15

<210> 181
<211> 12
<212> PRT
<213> Homo sapiens

<400> 181

Val Gly Gln Met Asp Lys Tyr Tyr Ala Met Asp Val
1 5 10

<210> 182
<211> 8
<212> PRT
<213> Homo sapiens

<400> 182

Gly Gly Pro Val Ser Gly Gly Gly
1 5

<210> 183
<211> 9
<212> PRT
<213> Homo sapiens

<400> 183

Phe Met Phe His Ser Gly Ser Pro Arg
1 5

<210> 184
<211> 11
<212> PRT

<213> Homo sapiens

<400> 184

Arg Ala Ser Gln Ser Ile Gly Ala Tyr Val Asn
1 5 10

<210> 185
<211> 7
<212> PRT
<213> Homo sapiens

<400> 185

Gly Ala Ser Asn Leu Gln Ser
1 5

<210> 186
<211> 9
<212> PRT
<213> Homo sapiens

<400> 186

Gln Gln Thr Tyr Ser Thr Pro Ile Thr
1 5

<210> 187
<211> 5
<212> PRT
<213> Homo sapiens

<400> 187

Ser Asp Tyr Trp Ser
1 5

<210> 188
<211> 16
<212> PRT
<213> Homo sapiens

<400> 188

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

<210> 189
<211> 13
<212> PRT
<213> Homo sapiens

<400> 189

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

<210> 190
<211> 6
<212> PRT
<213> Homo sapiens

<400> 190

Gly Gly Ser Ile Thr Ser
1 5

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<400> 191

Phe Phe Tyr Asn Gly Gly Ser Thr Lys
1 5

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<400> 192

Arg Ala Ser Gln Ser Ile Ser Thr Tyr Leu Asn
1 5 10

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Gly Ala Thr Asn Leu Gln Ser
1 5

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<400> 194

Gln Gln Ser Tyr Asn Thr Pro Leu Ile
1 5

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<400> 195

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

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<400> 196

Ser Tyr Asn Trp Ile
1 5

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<400> 197

His Ile Tyr Asp Tyr Gly Arg Thr Phe Tyr Asn Ser Ser Leu Gln Ser
1 5 10 15

<210> 198
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<400> 198

Pro Leu Gly Ile Leu His Tyr Tyr Ala Met Asp Leu
1 5 10

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<400> 199

Arg Ala Ser Gln Ser Ile Asp Lys Phe Leu Asn
1 5 10

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<400> 200

Gly Ala Ser Asn Leu His Ser
1 5

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<400> 201

Gln Gln Ser Phe Ser Val Pro Ala
1 5

<210> 202
<211> 6
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<400> 202

Gly Gly Ser Ile Ser Ser
1 5

<210> 203
<211> 9
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<400> 203

His Ile Tyr Asp Tyr Gly Arg Thr Phe
1 5

<210> 204
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<212> PRT
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<400> 204

Ser Thr Tyr Met Asn
1 5

<210> 205
<211> 16
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<213> Homo sapiens

<400> 205

Val Phe Tyr Ser Glu Thr Arg Thr Tyr Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 206
<211> 10
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<213> Homo sapiens

<400> 206

Val Gln Arg Leu Ser Tyr Gly Met Asp Val
1 5 10

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<400> 207

Gly Ala Ser Thr Leu Gln Ser
1 5

<210> 208
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<400> 208

Gln Gln Thr Tyr Ser Ile Pro Leu
1 5

<210> 209
<211> 6
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<400> 209

Gly Leu Ser Val Ser Ser
1 5

<210> 210
<211> 9
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<400> 210

Val Phe Tyr Ser Glu Thr Arg Thr Tyr
1 5

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<400> 211

Gly Ala Ser Ser Leu Gln Ser
1 5

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<400> 212

Ser Asp Phe Trp Ser
1 5

<210> 213
<211> 16
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<400> 213

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

<210> 214
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<400> 214

Asn Gly Arg Ser Ser Thr Ser Trp Gly Ile Asp Val
1 5 10

<210> 215
<211> 11

<212> PRT
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<400> 215

Arg Ala Ser Gln Ser Ile Ser Thr Tyr Leu His
1 5 10

<210> 216
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<400> 216

Ala Ala Ser Ser Leu Gln Ser
1 5

<210> 217
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<400> 217

Tyr Val Tyr Asn Arg Gly Ser Thr Lys
1 5

<210> 218
<211> 16
<212> PRT
<213> Homo sapiens

<400> 218

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

<210> 219
<211> 11
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<400> 219

His Val Gly Gly His Thr Tyr Gly Ile Asp Tyr
1 5 10

<210> 220
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<400> 220

Arg Ala Ser Gln Ser Ile Ser Asn Tyr Leu Asn
1 5 10

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<400> 221

Gln Gln Ser Tyr Asn Thr Pro Ile Thr
1 5

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<400> 222

Gly Ala Ser Ile Ser Ser
1 5

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<400> 223

Tyr Ile Tyr Asn Arg Gly Ser Thr Lys
1 5

<210> 224
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<400> 224

Ser Tyr Ser Trp Ser
1 5

<210> 225
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<400> 225

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

<210> 226
<211> 13
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<400> 226

Thr Gly Ser Glu Ser Thr Thr Gly Tyr Gly Met Asp Val
1 5 10

<210> 227
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<400> 227

Ala Ala Ser Ser Leu His Ser
1 5

<210> 228
<211> 9
<212> PRT
<213> Homo sapiens

<400> 228

Gln Gln Ser Tyr Ser Pro Pro Ile Thr
1 5

<210> 229
<211> 6
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<400> 229

Gly Asp Ser Ile Ser Ser
1 5

<210> 230
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<400> 230

Tyr Leu Tyr Tyr Ser Gly Ser Thr Lys
1 5

<210> 231
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<212> PRT
<213> Homo sapiens

<400> 231

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

<210> 232
<211> 11
<212> PRT
<213> Homo sapiens

<400> 232

His Asp Asp Ala Ser His Gly Tyr Ser Ile Ser
1 5 10

<210> 233
<211> 11
<212> PRT
<213> Homo sapiens

<400> 233

Arg Ala Ser Gln Thr Ile Ser Thr Tyr Leu Asn

1 5 10

<210> 234
<211> 9
<212> PRT
<213> Homo sapiens

<400> 234

Gln Gln Ser Tyr Asn Thr Pro Leu Thr
1 5

<210> 235
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<400> 235

Ala Tyr His Trp Ser
1 5

<210> 236
<211> 16
<212> PRT
<213> Homo sapiens

<400> 236

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

<210> 237
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<212> PRT
<213> Homo sapiens

<400> 237

Pro Leu Gly Ser Arg Tyr Tyr Tyr Gly Met Asp Val
1 5 10

<210> 238
<211> 11
<212> PRT
<213> Homo sapiens

<400> 238

Arg Ala Ser Gln Ser Ile Ser Arg Tyr Leu Asn
1 5 10

<210> 239
<211> 7
<212> PRT
<213> Homo sapiens

<400> 239

Gly Ala Ser Thr Leu Gln Asn
1 5

<210> 240
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<400> 240

Gln Gln Ser Tyr Ser Val Pro Ala
1 5

<210> 241
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<212> PRT
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<400> 241

Gly Ala Thr Asp Leu Gln Ser
1 5

<210> 242
<211> 5
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<400> 242

Asp Asn Tyr Ile Asn
1 5

<210> 243
<211> 16
<212> PRT
<213> Homo sapiens

<400> 243

Val Phe Tyr Ser Ala Asp Arg Thr Ser Tyr Ala Asp Ser Val Lys Gly
1 5 10 15

<210> 244
<211> 10
<212> PRT
<213> Homo sapiens

<400> 244

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

<210> 245
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<400> 245

Gln Gln Thr Phe Ser Ile Pro Leu
1 5

<210> 246

<211> 9
<212> PRT
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<400> 246

Val Phe Tyr Ser Ala Asp Arg Thr Ser
1 5

<210> 247
<211> 6
<212> PRT
<213> Homo sapiens

<400> 247

Gly Phe Ser Val Ser Asp
1 5

<210> 248
<211> 7
<212> PRT
<213> Homo sapiens

<400> 248

Ser Gly Ala Tyr Tyr Trp Thr
1 5

<210> 249
<211> 16
<212> PRT
<213> Homo sapiens

<400> 249

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

<210> 250
<211> 13
<212> PRT
<213> Homo sapiens

<400> 250

Ala Ala Ser Thr Ser Val Leu Gly Tyr Gly Met Asp Val
1 5 10

<210> 251
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<212> PRT
<213> Homo sapiens

<400> 251

Gln Gln Ser Tyr Ser Thr Pro Leu Thr
1 5

<210> 252
<211> 8
<212> PRT

<213> Homo sapiens

<400> 252

Gly Asp Ser Ile Thr Ser Gly Ala
1 5

<210> 253
<211> 9
<212> PRT
<213> Homo sapiens

<400> 253

Tyr Ile Tyr Tyr Ser Gly Asn Thr Tyr
1 5

<210> 254
<211> 7
<212> PRT
<213> Homo sapiens

<400> 254

Val Ser Asp Asn Tyr Ile Asn
1 5

<210> 255
<211> 10
<212> PRT
<213> Homo sapiens

<400> 255

Phe Gly Gly Gly Thr Arg Val Glu Ile Lys
1 5 10

<210> 256
<211> 12
<212> PRT
<213> Homo sapiens

<400> 256

Val Phe Tyr Ser Ala Asp Arg Thr Ser Tyr Ala Asp
1 5 10

<210> 257
<211> 5
<212> PRT
<213> Homo sapiens

<400> 257

Ser Gly Phe Ser Val
1 5

<210> 258
<211> 6
<212> PRT
<213> Homo sapiens

<400> 258

Gly Gly Ser Ile Ser Asn
1 5

<210> 259
<211> 9
<212> PRT
<213> Homo sapiens

<400> 259

Tyr Val Tyr Asn Ser Gly Asn Thr Lys
1 5

<210> 260
<211> 6
<212> PRT
<213> Homo sapiens

<400> 260

Gly Gly Ser Ile Ser Ala
1 5

<210> 261
<211> 9
<212> PRT
<213> Homo sapiens

<400> 261

His Ile Phe Asp Ser Gly Ser Thr Tyr
1 5

<210> 262
<211> 353
<212> DNA
<213> Homo sapiens

<400> 262
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acctgcactg tctctggttc gtccatcagt aattactact ggagctggat ccggcagtcc 120

ccagggaagg gactggagtg gattgggttt atctattacg gtggaaacac caagtacaat 180

ccctccctca agagccgcgt caccatatca caagacactt ccaagagtca ggtctccctg 240

acgatgagct ctgtgaccgc tgcggaatcg gccgtctatt tctgtgcgag agcgtcttgt 300

agtggtggtt actgtatcct tgactactgg ggccagggaa ccctggtcac cgt 353

<210> 263
<211> 105
<212> PRT
<213> Homo sapiens

<400> 263

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

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

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

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

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

Thr Met Ser Ser Val Thr Ala Ala Glu Ser Ala Val Tyr Phe Cys Ala
                85                  90                  95

Arg Ala Ser Cys Ser Gly Gly Tyr Cys
            100                 105
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<210> 264
<211> 360
<212> DNA
<213> Homo sapiens

<400> 264

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acctgcactg tctctggttc gtccatcagt aattactact ggagctggat ccggcagtcc      120

ccagggaagg gactggagtg gattgggttt atctattacg gtggaaacac caagtacaat      180

ccctccctca agagccgcgt caccatatca caagacactt ccaagagtca ggtctccctg      240

acgatgagct ctgtgaccgc tgcggaatcg gccgtctatt tctgtgcgag agcgtcttgt      300

agtggtggtt actgtatcct tgactactgg ggccagggaa ccctggtcac cgtctcgagc      360
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<210> 265
<211> 120
<212> PRT
<213> Homo sapiens

<400> 265

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

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

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

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

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

Thr Met Ser Ser Val Thr Ala Ala Glu Ser Ala Val Tyr Phe Cys Ala
85 90 95

Arg Ala Ser Cys Ser Gly Gly Tyr Cys Ile Leu Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 266
<211> 353
<212> DNA
<213> Homo sapiens

<400> 266
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tcctgtgcag cctctggatt caccgtcagt agcaactaca tgagttgggt ccgccaggct 120

ccagggaagg ggctggagtg ggtctcagtt atttatagtg gtggtagcac atactacgca 180

gactccgtga agggcagatt ctccttctcc agagacaact ccaagaacac agtgtttctt 240

caaatgaaca gcctgagagc cgaggacacg gctgtgtatt actgtgcgag atgtctgagc 300

aggatgcggg gttacggttt agacgtctgg ggccaaggga ccacggtcac cgt 353

<210> 267
<211> 119
<212> PRT
<213> Homo sapiens

<400> 267

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

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

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

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

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

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

Arg Cys Leu Ser Arg Met Arg Gly Tyr Gly Leu Asp Val Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser
        115

<210> 268
<211> 360
<212> DNA
<213> Homo sapiens

<400> 268
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagaatc 60

tcctgtgcag cctctggatt caccgtcagt agcaactaca tgagttgggt ccgccaggct 120

ccagggaagg ggctggagtg ggtctcagtt atttatagtg gtggtagcac atactacgca 180

gactccgtga agggcagatt ctccttctcc agagacaact ccaagaacac agtgtttctt 240

caaatgaaca gcctgagagc cgaggacacg gctgtgtatt actgtgcgag atgtctgagc 300

aggatgcggg gttacggttt agacgtctgg ggccaaggga ccacggtcac cgtctcgagc 360

<210> 269
<211> 120
<212> PRT
<213> Homo sapiens

<400> 269

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

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

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

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

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

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

Arg Cys Leu Ser Arg Met Arg Gly Tyr Gly Leu Asp Val Trp Gly Gln
            100   105   110

Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 270
<211> 12
<212> PRT
<213> Homo sapiens

<400> 270

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

<210> 271
<211> 9
<212> PRT
<213> Influenza A virus

<400> 271

Ser Leu Leu Thr Glu Val Glu Thr Pro
1 5

<210> 272
<211> 24
<212> PRT
<213> Influenza A virus

<400> 272

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Lys Asn Gly Trp Glu
1 5 10 15

Cys Lys Cys Asn Asp Ser Ser Asp
20

<210> 273
<211> 23
<212> PRT
<213> Influenza A virus

<400> 273

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Arg Cys Asn Asp Ser Ser Asp
20

<210> 274
<211> 23
<212> PRT
<213> Influenza A virus

<400> 274

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Ser Glu Trp Gly Cys
1 5 10 15

Arg Cys Asn Asp Ser Gly Asp
20

<210> 275
<211> 23
<212> PRT
<213> Influenza A virus

<400> 275

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Glu Cys
1 5 10 15

Arg Cys Asn Gly Ser Ser Asp
20

<210> 276
<211> 23
<212> PRT
<213> Influenza A virus

<400> 276

Ser Leu Pro Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Arg Cys Asn Asp Ser Ser Asp
20

<210> 277
<211> 23
<212> PRT
<213> Influenza A virus

<400> 277

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Arg Cys Asn Gly Ser Ser Asp
20

<210> 278
<211> 23
<212> PRT
<213> Influenza A virus

<400> 278

Ser Leu Leu Thr Glu Val Asp Thr Leu Thr Arg Asn Gly Trp Gly Cys
1 5 10 15

Arg Cys Ser Asp Ser Ser Asp
20

<210> 279
<211> 23
<212> PRT
<213> Influenza A virus

<400> 279

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Lys Glu Trp Gly Cys
1 5 10 15

Asn Cys Ser Asp Ser Ser Asp
20

<210> 280
<211> 23
<212> PRT
<213> Influenza A virus

<400> 280

Ser Leu Leu Thr Glu Val Glu Thr Leu Ile Arg Asn Gly Trp Gly Cys
1 5 10 15

Arg Cys Ser Asp Ser Ser Asp
20

<210> 281
<211> 23
<212> PRT
<213> Influenza A virus

<400> 281

Ser Leu Leu Thr Glu Val Glu Thr Leu Thr Lys Asn Gly Trp Gly Cys
1 5 10 15

Arg Cys Ser Asp Ser Ser Asp
20

<210> 282
<211> 23
<212> PRT
<213> Influenza A virus

<400> 282

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Ser Glu Trp Gly Cys
1 5 10 15

Arg Tyr Asn Asp Ser Ser Asp
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<210> 283
<211> 23
<212> PRT
<213> Influenza A virus

<400> 283

Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asn Gly Trp Glu Cys
1 5 10 15

Lys Cys Ser Asp Ser Ser Asp
20

<210> 284
<211> 23
<212> PRT
<213> Influenza A virus

<400> 284

Ser Leu Leu Thr Glu Val Glu Thr His Thr Arg Asn Gly Trp Glu Cys
1 5 10 15

Lys Cys Ser Asp Ser Ser Asp
20

<210> 285
<211> 23
<212> PRT
<213> Influenza A virus

<400> 285

Ser Leu Leu Thr Glu Val Lys Thr Pro Thr Arg Asn Gly Trp Glu Cys
1 5 10 15

Lys Cys Ser Asp Ser Ser Asp
20

<210> 286
<211> 23
<212> PRT
<213> Influenza A virus

<400> 286

Ser Leu Leu Thr Glu Val Glu Thr Leu Thr Arg Asn Gly Trp Gly Cys
1 5 10 15

Arg Cys Ser Asp Ser Ser Asp
20

<210> 287
<211> 23
<212> PRT
<213> Influenza A virus

<400> 287

Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asp Gly Trp Glu Cys
1 5 10 15

Lys Cys Ser Asp Ser Ser Asp
20

<210> 288
<211> 23
<212> PRT
<213> Influenza A virus

<400> 288

Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asn Gly Trp Gly Cys
1 5 10 15

Arg Cys Ser Asp Ser Ser Asp
20

<210> 289
<211> 23
<212> PRT
<213> Influenza A virus

<400> 289

Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asn Gly Trp Glu Cys
1 5 10 15

Lys Cys Asn Asp Ser Ser Asp
20

<210> 290
<211> 23
<212> PRT
<213> Influenza A virus

<400> 290

Ser Leu Leu Thr Glu Val Glu Thr Leu Thr Arg Asn Gly Trp Glu Cys
1 5 10 15

Lys Cys Ser Asp Ser Ser Asp
20

<210> 291
<211> 23
<212> PRT
<213> Influenza A virus

<400> 291

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Lys Cys Asn Asp Ser Ser Asp
20

<210> 292
<211> 23
<212> PRT
<213> Influenza A virus

<400> 292

Ser Phe Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Arg Cys Asn Gly Ser Ser Asp
20

<210> 293
<211> 23
<212> PRT
<213> Influenza A virus

<400> 293

Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asn Gly Trp Glu Cys

1 5 10 15

Arg Cys Asn Asp Ser Ser Asp
20

<210> 294
<211> 23
<212> PRT
<213> Influenza A virus

<400> 294

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Lys Gly Trp Glu Cys
1 5 10 15

Asn Cys Ser Asp Ser Ser Asp
20

<210> 295
<211> 23
<212> PRT
<213> Influenza A virus

<400> 295

Ser Leu Leu Thr Glu Val Glu Thr Pro Thr Arg Asn Glu Trp Glu Cys
1 5 10 15

Arg Cys Ser Asp Ser Ser Asp
20

<210> 296
<211> 23
<212> PRT
<213> Influenza A virus

<400> 296

Ser Leu Leu Thr Gly Val Glu Thr His Thr Arg Asn Gly Trp Gly Cys
1 5 10 15

Lys Cys Ser Asp Ser Ser Asp
20

<210> 297
<211> 23
<212> PRT
<213> Influenza A virus

<400> 297

Ser Leu Leu Pro Glu Val Glu Thr His Thr Arg Asn Gly Trp Gly Cys
1 5 10 15

Arg Cys Ser Asp Ser Ser Asp
20

<210> 298

<211> 16
<212> PRT
<213> Influenza A virus

<400> 298

Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys Arg
1 5 10 15

<210> 299
<211> 15
<212> PRT
<213> Influenza A virus

<400> 299

Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys Arg
1 5 10 15

<210> 300
<211> 12
<212> PRT
<213> Influenza A virus

<400> 300

Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys Arg
1 5 10

<210> 301
<211> 17
<212> PRT
<213> Influenza A virus

<400> 301

Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys Arg Cys Asn Asp Ser Ser
1 5 10 15

Asp

<210> 302
<211> 16
<212> PRT
<213> Influenza A virus

<400> 302

Thr Pro Ile Arg Asn Glu Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp
1 5 10 15

<210> 303
<211> 15
<212> PRT
<213> Influenza A virus

<400> 303

Pro Ile Arg Asn Glu Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp
1 5 10 15

<210> 304
<211> 14
<212> PRT
<213> Influenza A virus

<400> 304

Ile Arg Asn Glu Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp
1 5 10

<210> 305
<211> 13
<212> PRT
<213> Influenza A virus

<400> 305

Arg Asn Glu Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp
1 5 10

<210> 306
<211> 12
<212> PRT
<213> Influenza A virus

<400> 306

Asn Glu Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp
1 5 10

<210> 307
<211> 17
<212> PRT
<213> Influenza A virus

<400> 307

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Arg

<210> 308
<211> 16
<212> PRT
<213> Influenza A virus

<400> 308

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

<210> 309
<211> 15
<212> PRT
<213> Influenza A virus

<400> 309

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly

1 5 10 15

<210> 310
<211> 14
<212> PRT
<213> Influenza A virus

<400> 310

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp
1 5 10

<210> 311
<211> 13
<212> PRT
<213> Influenza A virus

<400> 311

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu
1 5 10

<210> 312
<211> 12
<212> PRT
<213> Influenza A virus

<400> 312

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn
1 5 10

<210> 313
<211> 11
<212> PRT
<213> Influenza A virus

<400> 313

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg
1 5 10

<210> 314
<211> 10
<212> PRT
<213> Influenza A virus

<400> 314

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile
1 5 10

<210> 315
<211> 8
<212> PRT
<213> Influenza A virus

<400> 315

Ser Leu Leu Thr Glu Val Glu Thr
1 5

<210> 316
<211> 7
<212> PRT
<213> Influenza A virus

<400> 316

Ser Leu Leu Thr Glu Val Glu
1 5

<210> 317
<211> 107
<212> PRT
<213> Homo sapiens

<400> 317

Asp Ile Gln Val 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 Asn Ile Tyr Lys Tyr
20 25 30

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

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

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

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

<210> 318
<211> 5
<212> PRT
<213> Homo sapiens

<400> 318

Asn Ser Phe Trp Gly
1 5

<210> 319
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Histidine tag

<400> 319

His His His His His His
1 5

<210> 320
<211> 131
<212> PRT
<213> Homo sapiens

<400> 320

Met Asp Met Arg Val Leu Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1 5 10 15

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

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser
35 40 45

Gln Asn Ile Tyr Lys Tyr Leu Asn Trp Tyr Gln Gln Arg Pro Gly Lys
50 55 60

Ala Pro Lys Gly Leu Ile Ser Ala Ala Ser Gly Leu Gln Ser Gly Val
65 70 75 80

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
85 90 95

Ile Thr Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
100 105 110

Ser Tyr Ser Pro Pro Leu Thr Phe Gly Gly Gly Thr Arg Val Asp Ile
115 120 125

Lys Arg Thr
130

<210> 321
<211> 5
<212> PRT
<213> Homo sapiens

<400> 321

Asp Ile Lys Arg Thr
1 5

<210> 322
<211> 134
<212> PRT
<213> Homo sapiens

<400> 322

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

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

Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys
        35                  40                  45

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

Pro Gly Lys Ala Pro Lys Gly Leu Ile Ser Ala Ala Ser Gly Leu Gln
65                  70                  75                  80

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
                85                  90                  95

Thr Leu Thr Ile Thr Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr
            100                 105                 110

Cys Gln Gln Ser Tyr Ser Pro Pro Leu Thr Phe Gly Gly Gly Thr Arg
        115                 120                 125

Val Asp Ile Lys Arg Thr
    130
```

<210> 323
<211> 134
<212> PRT
<213> Homo sapiens

<400> 323

```
Ala Ser Thr Met Asp Met Arg Val Leu Ala Gln Leu Leu Gly Leu Leu
1               5                   10                  15

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

Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys
        35                  40                  45

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

Pro Gly Lys Ala Pro Lys Gly Leu Ile Ser Ala Ala Ser Gly Leu Gln
65                  70                  75                  80

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
                85                  90                  95

Thr Leu Thr Ile Thr Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr
            100                 105                 110
```

Cys Gln Gln Ser Tyr Ser Pro Pro Leu Thr Phe Gly Gly Gly Thr Arg
115 120 125

Val Glu Ile Lys Arg Thr
130

<210> 324
<211> 133
<212> PRT
<213> Homo sapiens

<400> 324

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

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

Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys
35 40 45

Arg Thr Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr Gln Gln Lys
50 55 60

Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Gln
65 70 75 80

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
85 90 95

Thr Leu Thr Ile Ser Gly Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr
100 105 110

Cys Gln Gln Ser Tyr Ser Met Pro Ala Phe Gly Gln Gly Thr Lys Leu
115 120 125

Glu Ile Lys Arg Thr
130

<210> 325
<211> 141
<212> PRT
<213> Homo sapiens

<400> 325

Ala Ser Thr Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala
1 5 10 15

Pro Ser Trp Val Leu Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly
20 25 30

Leu Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly
35 40 45

```
Ser Ser Ile Ser Asn Tyr Tyr Trp Ser Trp Ile Arg Gln Ser Pro Gly
    50                  55                  60

Lys Gly Leu Glu Trp Ile Gly Phe Ile Tyr Tyr Gly Gly Asn Thr Lys
65                  70                  75                  80

Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Gln Asp Thr Ser
                85                  90                  95

Lys Ser Gln Val Ser Leu Thr Met Ser Ser Val Thr Ala Ala Glu Ser
            100                 105                 110

Ala Val Tyr Phe Cys Ala Arg Ala Ser Cys Ser Gly Gly Tyr Cys Ile
        115                 120                 125

Leu Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
    130                 135                 140
```

<210> 326
<211> 141
<212> PRT
<213> Homo sapiens

<400> 326

```
Ala Ser Thr Met Glu Leu Gly Leu Cys Trp Val Phe Leu Val Ala Ile
1               5                   10                  15

Leu Lys Gly Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Gly
            20                  25                  30

Leu Val Gln Pro Gly Gly Ser Leu Arg Ile Ser Cys Ala Ala Ser Gly
        35                  40                  45

Phe Thr Val Ser Ser Asn Tyr Met Ser Trp Val Arg Gln Ala Pro Gly
    50                  55                  60

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

Tyr Ala Asp Ser Val Lys Gly Arg Phe Ser Phe Ser Arg Asp Asn Ser
                85                  90                  95

Lys Asn Thr Val Phe Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr
            100                 105                 110

Ala Val Tyr Tyr Cys Ala Arg Cys Leu Ser Arg Met Arg Gly Tyr Gly
        115                 120                 125

Leu Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser
    130                 135                 140
```

<210> 327
<211> 141
<212> PRT
<213> Homo sapiens

<400> 327

```
Ala Ser Thr Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala
1               5                  10                  15

Pro Ser Trp Val Leu Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly
            20                  25                  30

Leu Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly
        35                  40                  45

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

Lys Gly Leu Glu Trp Ile Gly Phe Ile Tyr Tyr Gly Gly Asn Thr Lys
65                  70                  75                  80

Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Gln Asp Thr Ser
                85                  90                  95

Lys Ser Gln Val Ser Leu Thr Met Ser Ser Val Thr Ala Ala Glu Ser
            100                 105                 110

Ala Val Tyr Phe Cys Ala Arg Ala Ser Cys Ser Gly Gly Tyr Cys Ile
        115                 120                 125

Leu Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
    130                 135                 140
```