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<110> 4-Antibody AG, Friedrich-Alexander-Universität Erlangen-Nürnberg

<120> Binding Members for Human Cytomegalovirus

<130> R3017 PCT

<150> EP 09 01 5951.8
<151> 2009-12-23

<150> EP 10 00 3669.8
<151> 2010-04-01

<150> US 61/289,835
<151> 2009-12-23

<150> US 61/320,057
<151> 2010-04-01

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<170> PatentIn version 3.5

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35 40 45

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

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Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Ala Tyr
65 70 75 80

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

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

Gly Trp Ile Asn Pro Gln Ser Gly Gly Thr Gly Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Ser Ser Ser Asn Thr Ala Phe
65 70 75 80

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

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35 40 45

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

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Val Ser Ser
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35 40 45

Gly Cys Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Asp Gly Ala Lys Thr Val Thr Thr Ser Gly Met Ser Leu Leu
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Tyr Tyr Tyr Asp Val Met Asp Ile Trp Gly Gln Gly Thr Met Val Thr
115 120 125

Val Ser Ser
130

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35 40 45

Gly Cys Ile Asn Pro His Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Asp Gly Ala Lys Thr Val Thr Thr Phe Gly Ala Ser Leu Leu
100 105 110

Tyr Tyr Tyr Asp Ile Met Asp Val Trp Gly Gln Gly Thr Leu Val Thr
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Val Ser Ser
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35 40 45

Gly Ser Ile Asn Pro His Ser Gly Gly Thr His Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

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Val Ser Ser
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Asp Phe Tyr Ile Asn
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<210> 30
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Tyr Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45

Gly Ser Ile Asn Pro His Ser Gly Gly Thr His Tyr Ala Gln Lys Phe
    50                  55                  60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65                  70                  75                  80

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

Ala Arg Asp Gly Ala Lys Thr Val Thr Thr Phe Gly Ala Ser Leu Leu
            100                 105                 110

Tyr Tyr Tyr Asp Ile Met Asp Val Trp Gly Gln Gly Thr Leu Val Thr
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Val Ser Ser
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Tyr Leu Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

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

Arg Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Arg Ala Ala Tyr
65 70 75 80

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

Ala Arg Asp Gly Ala Lys Thr Met Thr Thr Ser Gly Leu Ser Leu Leu
100 105 110

Tyr Tyr Tyr Asp Val Met Asp Val Trp Gly Gln Gly Thr Leu Val Thr

115 120 125

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

Gly Trp Ile Asn Pro Gln Ser Gly Gly Thr Gly Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Ser Ser Ser Asn Thr Ala Phe
65 70 75 80

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

Ala Arg Asp Gly Ala Lys Thr Val Ser Asn Ser Gly Leu Gly Leu Leu
100 105 110

Tyr Tyr His Ser Arg Leu Asp Ala Trp Gly Gln Gly Thr Met Val Thr
115 120 125

Val Ser Ser
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Asp His Tyr Leu Val
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<210> 44
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His Ser Arg Leu Asp Ala
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20 25 30

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg Asp Gly Ala Lys Thr Val Ser Asn Ser Gly Leu Ser Leu Leu
100 105 110

Tyr Tyr His Asn Arg Leu Asp Ala Trp Gly Gln Gly Thr Leu Val Thr
115 120 125

Val Ser Ser
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<400> 48

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<210> 49
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His Asn Arg Leu Asp Ala
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Tyr Met Val Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg Asp Gly Ala Lys Ala Val Ser Asn Ser Gly Leu Ser Leu Leu
100 105 110

Tyr Tyr His Asn Arg Leu Asp Ala Trp Gly Gln Gly Thr Met Val Thr
115 120 125

Val Ser Ser
130

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Asp His Tyr Met Val
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<210> 54
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Trp Ile Asn Pro Gln Ser Gly Gly Thr Gly Tyr Gly Gln Lys Phe Gln
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Gly

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His Asn Arg Leu Asp Ala
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<400> 56
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cctggacaag ggcttgagtg gatgggatgc atcaacccga acagtggtgg cacaaactat 180

gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcag cacagcctac 240

atggaactga ccaggctcag atctgacgac acggccgtat attactgtgc gagagatggg 300

gctaagacgg tgactacctc cggaatgtct ttgttgtact actacgacgt tatggacatc 360

tggggccagg gaaccctggt caccgtctcc agc 393

<210> 57
<211> 131
<212> PRT
<213> Homo sapiens

<400> 57

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
20 25 30

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

Gly Cys Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr

65 70 75 80

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

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

Tyr Tyr Tyr Asp Val Met Asp Ile Trp Gly Gln Gly Thr Leu Val Thr
115 120 125

Val Ser Ser
130

<210> 58
<211> 5
<212> PRT
<213> Homo sapiens

<400> 58

Gly Tyr Tyr Met Asn
1 5

<210> 59
<211> 17
<212> PRT
<213> Homo sapiens

<400> 59

Cys Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe Gln
1 5 10 15

Gly

<210> 60
<211> 22
<212> PRT
<213> Homo sapiens

<400> 60

Asp Gly Ala Lys Thr Val Thr Thr Ser Gly Met Ser Leu Leu Tyr Tyr
1 5 10 15

Tyr Asp Val Met Asp Ile
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<210> 61
<211> 393
<212> DNA
<213> Homo sapiens

<400> 61
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gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcag cacagcctac 240

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gctaagacgg tgactacctc cggaatgtct ttgttgtact actacgacgt tatggacatc 360

tggggccaag ggacaatggt caccgtctct agc 393

<210> 62
<211> 131
<212> PRT
<213> Homo sapiens

<400> 62

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
20 25 30

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

Gly Cys Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

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

Tyr Tyr Tyr Asp Val Met Asp Ile Trp Gly Gln Gly Thr Met Val Thr
115 120 125

Val Ser Ser
130

<210> 63
<211> 5
<212> PRT
<213> Homo sapiens

<400> 63

Gly Tyr Tyr Met Asn
1 5

<210> 64

<211> 17
<212> PRT
<213> Homo sapiens

<400> 64

Cys Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe Gln
1 5 10 15

Gly

<210> 65
<211> 22
<212> PRT
<213> Homo sapiens

<400> 65

Asp Gly Ala Lys Thr Val Thr Thr Ser Gly Met Ser Leu Leu Tyr Tyr
1 5 10 15

Tyr Asp Val Met Asp Ile
20

<210> 66
<211> 393
<212> DNA
<213> Homo sapiens

<400> 66
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tcctgcaagg cttctggata caccttcacc gactactata tgaactgggt gcgacaggcc 120

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gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcag cacagtctac 240

atggagttga gcaggctaaa atctgacgac acggccgtct attactgtgc gagagatggg 300

gctaaaacgg tgactacctt cggagcgtct ttgttgtact actacgacat tatggacgtc 360

tggggccagg gaaccctggt caccgtctcc agc 393

<210> 67
<211> 131
<212> PRT
<213> Homo sapiens

<400> 67

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

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

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

```
Gly Cys Ile Asn Pro His Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
    50                  55                  60

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

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

Ala Arg Asp Gly Ala Lys Thr Val Thr Thr Phe Gly Ala Ser Leu Leu
            100                 105                 110

Tyr Tyr Tyr Asp Ile Met Asp Val Trp Gly Gln Gly Thr Leu Val Thr
        115                 120                 125

Val Ser Ser
    130
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<210> 68
<211> 5
<212> PRT
<213> Homo sapiens

<400> 68

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Asp Tyr Tyr Met Asn
1               5
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<210> 69
<211> 17
<212> PRT
<213> Homo sapiens

<400> 69

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Cys Ile Asn Pro His Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe Gln
1               5                   10                  15

Gly
```

<210> 70
<211> 22
<212> PRT
<213> Homo sapiens

<400> 70

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

Tyr Asp Ile Met Asp Val
            20
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<210> 71
<211> 393

<212> DNA
<213> Homo sapiens

<400> 71
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gcacagaaat ttcagggcag ggtcactatg accagggaca cgtccatcag ggcagcctac 240

atggagctga gcagcctgag atctgacgac acggccgtct attactgtgc gagagatggg 300

gctaaaacga tgactacgtc tggactgtct ttgttgcact actacgacgt tatggacgtc 360

tggggccagg gaaccctggt caccgtctcc agc 393

<210> 72
<211> 131
<212> PRT
<213> Homo sapiens

<400> 72

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Arg Ala Ala Tyr
65 70 75 80

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

Ala Arg Asp Gly Ala Lys Thr Met Thr Thr Ser Gly Leu Ser Leu Leu
100 105 110

His Tyr Tyr Asp Val Met Asp Val Trp Gly Gln Gly Thr Leu Val Thr
115 120 125

Val Ser Ser
130

<210> 73
<211> 5
<212> PRT
<213> Homo sapiens

<400> 73

Asp Tyr Tyr Leu Asn
1 5

<210> 74
<211> 17
<212> PRT
<213> Homo sapiens

<400> 74

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

Gly

<210> 75
<211> 22
<212> PRT
<213> Homo sapiens

<400> 75

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

Tyr Asp Val Met Asp Val
20

<210> 76
<211> 393
<212> DNA
<213> Homo sapiens

<400> 76
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tcctgcaagg cttctggata caccttcacc ggctactata tgaactgggt gcgacaggcc 120

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gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcag cacagcctac 240

atggaactga ccaggctcag atctgacgac acggccgtat attactgtgc gagagatggg 300

gctaaaacgg tgactacctt cggaatgtct ttgttgtact actacgacgt tatggacatc 360

tggggccaag ggacaatggt caccgtctct agc 393

<210> 77
<211> 131
<212> PRT
<213> Homo sapiens

<400> 77

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr

20 25 30

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

Gly Cys Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Asp Gly Ala Lys Thr Val Thr Thr Phe Gly Met Ser Leu Leu
100 105 110

Tyr Tyr Tyr Asp Val Met Asp Ile Trp Gly Gln Gly Thr Met Val Thr
115 120 125

Val Ser Ser
130

<210> 78
<211> 5
<212> PRT
<213> Homo sapiens

<400> 78

Gly Tyr Tyr Met Asn
1 5

<210> 79
<211> 17
<212> PRT
<213> Homo sapiens

<400> 79

Cys Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe Gln
1 5 10 15

Gly

<210> 80
<211> 22
<212> PRT
<213> Homo sapiens

<400> 80

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

Tyr Asp Val Met Asp Ile
20

<210> 81
<211> 393
<212> DNA
<213> Homo sapiens

<400> 81
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tcctgcaagg cttctggata caccttcacc ggctactata tgaactgggt gcgacaggcc 120

cctggacaag ggcttgagtg gatgggatgc atcaacccga acagtggtgg cacaaactat 180

gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcag cacagcctac 240

atggagttga gaagtctaaa ttctgacgac acggccgtct attactgtgc gagagatggg 300

gctaagacgg tgactacctc cggaatgtct ttgttgtact actacgacgt tatgggcatc 360

tggggccaag ggacaatggt caccgtctct agc 393

<210> 82
<211> 131
<212> PRT
<213> Homo sapiens

<400> 82

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr
20 25 30

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

Gly Cys Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80

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

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

Tyr Tyr Tyr Asp Val Met Gly Ile Trp Gly Gln Gly Thr Met Val Thr
115 120 125

Val Ser Ser
130

<210> 83
<211> 5
<212> PRT
<213> Homo sapiens

<400> 83

Gly Tyr Tyr Met Asn
1 5

<210> 84
<211> 17
<212> PRT
<213> Homo sapiens

<400> 84

Cys Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe Gln
1 5 10 15

Gly

<210> 85
<211> 22
<212> PRT
<213> Homo sapiens

<400> 85

Asp Gly Ala Lys Thr Val Thr Thr Ser Gly Met Ser Leu Leu Tyr Tyr
1 5 10 15

Tyr Asp Val Met Gly Ile
20

<210> 86
<211> 393
<212> DNA
<213> Homo sapiens

<400> 86
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tcctgcaagg cttctggata caccttcacc gacttctata tcaactgggt gcgacaggcc 120

cctggacagg ggcttgagtg gatgggatcc atcaaccctc acagtggtgg cacacactat 180

gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcag cacagcctac 240

atggaactga ccaggctcag atctgacgac acggccgtat attactgtgc gagagatggg 300

gctaaaacgg tgactacctc cggaatgtct ttgttgtact actacgacgt tatggacatc 360

tggggccaag ggacaatggt caccgtctct agc 393

<210> 87
<211> 131
<212> PRT
<213> Homo sapiens

<400> 87

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

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

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

Gly Ser Ile Asn Pro His Ser Gly Gly Thr His Tyr Ala Gln Lys Phe
    50                  55                  60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65                  70                  75                  80

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

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

Tyr Tyr Tyr Asp Val Met Asp Ile Trp Gly Gln Gly Thr Met Val Thr
        115                 120                 125

Val Ser Ser
    130
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<210> 88
<211> 5
<212> PRT
<213> Homo sapiens

<400> 88

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Asp Phe Tyr Ile Asn
1               5
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<210> 89
<211> 17
<212> PRT
<213> Homo sapiens

<400> 89

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Ser Ile Asn Pro His Ser Gly Gly Thr His Tyr Ala Gln Lys Phe Gln
1               5                   10                  15

Gly
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<210> 90
<211> 22
<212> PRT
<213> Homo sapiens

<400> 90

Asp Gly Ala Lys Thr Val Thr Thr Ser Gly Met Ser Leu Leu Tyr Tyr
1 5 10 15

Tyr Asp Val Met Asp Ile
20

<210> 91
<211> 328
<212> DNA
<213> Homo sapiens

<400> 91
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tcctgctctg gaagcagctc caacattggg aagaattatg tgtcctggta ccagcaactc 120

ccaggtgcag cccccaaact cctcatcttt gacaataata agcgaccctc agggactcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tggtcatcac cggactccag 240

acaggggacg aggccgatta ttactgcgga acaccggata gaagcctgag tgtgatattc 300

ggcggaggga ccaaggtcac cgtcctag 328

<210> 92
<211> 109
<212> PRT
<213> Homo sapiens

<400> 92

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

Met Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn
20 25 30

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

Ile Phe Asp Asn Asn Lys Arg Pro Ser Gly Thr Pro Asp Arg Phe Ser
50 55 60

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

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Pro Asp Arg Ser Leu
85 90 95

Ser Val Ile Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 93
<211> 13
<212> PRT
<213> Homo sapiens

<400> 93

Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 94
<211> 7
<212> PRT
<213> Homo sapiens

<400> 94

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 95
<211> 10
<212> PRT
<213> Homo sapiens

<400> 95

Gly Thr Pro Asp Arg Ser Leu Ser Val Ile
1 5 10

<210> 96
<211> 328
<212> DNA
<213> Homo sapiens

<400> 96
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tcctgctctg gaagcagatc caacattggg aagaattatg tatcctggta ccagcaaccc 120

ccaggtacag cccccaaact cctcattttt gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tggccatctc cggactccag 240

gctgcggacg aggccgatta ctactgcgga acatgggata gcagcctgag tgtggtattc 300

ggcgggggga ccaaggtcac cgtcctag 328

<210> 97
<211> 109
<212> PRT
<213> Homo sapiens

<400> 97

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Lys Asn
20 25 30

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

Ile Phe Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser

eolf-seql

50 55 60

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

Ala Ala Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
85 90 95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 98
<211> 13
<212> PRT
<213> Homo sapiens

<400> 98

Ser Gly Ser Arg Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 99
<211> 7
<212> PRT
<213> Homo sapiens

<400> 99

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 100
<211> 10
<212> PRT
<213> Homo sapiens

<400> 100

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

<210> 101
<211> 328
<212> DNA
<213> Homo sapiens

<400> 101
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tcctgctctg gaagcagctc caacattggg aagaattatg tatcctggta ccagcagctc 120

ccaggaacag cccccaaact cctcattgat gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240

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ggcggaggga ccaaggtcac cgtcctag 328

<210> 102

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

<400> 102

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

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

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

Ile Asp Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
50 55 60

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

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Ser Ser Leu
85 90 95

Gly Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 103
<211> 13
<212> PRT
<213> Homo sapiens

<400> 103

Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 104
<211> 7
<212> PRT
<213> Homo sapiens

<400> 104

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 105
<211> 10
<212> PRT
<213> Homo sapiens

<400> 105

Ala Thr Trp Asp Ser Ser Leu Gly Val Val
1 5 10

<210> 106

<211> 328
<212> DNA
<213> Homo sapiens

<400> 106
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ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tgggaatcac cggactccag 240

actggggacg aggccgatta tttctgcgga acatgggata gcagcctgag tgtggtattc 300

ggcggaggga ccaaggtcac cgtcctag 328

<210> 107
<211> 109
<212> PRT
<213> Homo sapiens

<400> 107

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

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

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

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

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

Thr Gly Asp Glu Ala Asp Tyr Phe Cys Gly Thr Trp Asp Ser Ser Leu
85 90 95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 108
<211> 13
<212> PRT
<213> Homo sapiens

<400> 108

Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 109
<211> 7
<212> PRT
<213> Homo sapiens

<400> 109

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 110
<211> 10
<212> PRT
<213> Homo sapiens

<400> 110

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

<210> 111
<211> 328
<212> DNA
<213> Homo sapiens

<400> 111
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ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180

gaccgattct ctggttccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240

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ggcggaggga ccaaggtcac cgtcctag 328

<210> 112
<211> 109
<212> PRT
<213> Homo sapiens

<400> 112

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

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

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

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

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

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Arg Ser Leu
85 90 95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 113
<211> 13
<212> PRT
<213> Homo sapiens

<400> 113

Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 114
<211> 7
<212> PRT
<213> Homo sapiens

<400> 114

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 115
<211> 10
<212> PRT
<213> Homo sapiens

<400> 115

Ala Thr Trp Asp Arg Ser Leu Ser Val Val
1 5 10

<210> 116
<211> 328
<212> DNA
<213> Homo sapiens

<400> 116
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ccaggtgcag cccccaaact cctcatcttt gacaataata agcgaccctc agggactcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tggtcatcac cggactccag 240

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ggcggaggga ccaaggtcac cgtcctag 328

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<213> Homo sapiens

<400> 117

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
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Met Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn

20 25 30

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

Ile Phe Asp Asn Asn Lys Arg Pro Ser Gly Thr Pro Asp Arg Phe Ser
50 55 60

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

Thr Gly Asp Glu Thr Asp Tyr Tyr Cys Gly Thr Pro Asp Arg Ser Leu
85 90 95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 118
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<212> PRT
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<400> 118

Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 119
<211> 7
<212> PRT
<213> Homo sapiens

<400> 119

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 120
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<212> PRT
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<400> 120

Gly Thr Pro Asp Arg Ser Leu Ser Val Val
1 5 10

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ccaggaacag cccccaaact cctcattgat gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240

actggggacg aggccgatta ttactgcgca acatgggata gcagcctggg tgtggtcttc 300

ggcggaggaa cccagctgat catcctag 328

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<212> PRT
<213> Homo sapiens

<400> 122

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

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

Ile Asp Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
50 55 60

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

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Ser Ser Leu
85 90 95

Gly Val Val Phe Gly Gly Gly Thr Gln Leu Ile Ile Leu
100 105

<210> 123
<211> 13
<212> PRT
<213> Homo sapiens

<400> 123

Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 124
<211> 7
<212> PRT
<213> Homo sapiens

<400> 124

Asp Asn Asn Lys Arg Pro Ser
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<210> 125
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<400> 125

Ala Thr Trp Asp Ser Ser Leu Gly Val Val
1 5 10

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ccaggtacag cccccaaact cctcattttt gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tggccatctc cggactccag 240

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ggcgggggga ccaaggtcac cgtcctag 328

<210> 127
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<212> PRT
<213> Homo sapiens

<400> 127

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

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

Ile Phe Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
50 55 60

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

Ala Ala Asp Glu Ala Asp His Tyr Cys Gly Thr Trp Asp Ser Ser Leu
85 90 95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 128
<211> 13
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<213> Homo sapiens

<400> 128

eolf-seql

Ser Gly Ser Arg Ser Asn Ile Gly Lys Asn Tyr Val Ser
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<211> 7
<212> PRT
<213> Homo sapiens

<400> 129

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 130
<211> 10
<212> PRT
<213> Homo sapiens

<400> 130

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

<210> 131
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<212> DNA
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ccaggtgcag cccccaaact cctcatcttt gacaataata agcgaccctc agggactcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tggtcatcac cggactccag 240

acaggggacg aggccgatta ttactgcgga acaccggata gaagcctgag tgtggtattc 300

ggcggaggga ccaaggtcac cgtcctag 328

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

<400> 132

Gln Ser Val Leu Thr Gln Leu Pro Ser Val Ser Ala Ala Pro Gly Gln
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Met Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn
20 25 30

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

Ile Phe Asp Asn Asn Lys Arg Pro Ser Gly Thr Pro Asp Arg Phe Ser
50 55 60

eolf-seql

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

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Pro Asp Arg Ser Leu
85 90 95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 133
<211> 13
<212> PRT
<213> Homo sapiens

<400> 133

Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 134
<211> 7
<212> PRT
<213> Homo sapiens

<400> 134

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 135
<211> 10
<212> PRT
<213> Homo sapiens

<400> 135

Gly Thr Pro Asp Arg Ser Leu Ser Val Val
1 5 10

<210> 136
<211> 328
<212> DNA
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ccaggtacag cccccaaact cctcattttt gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tggccatctc cggactccag 240

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ggcgggggga ccaaggtcac cgtcctag 328

<210> 137
<211> 109
<212> PRT
<213> Homo sapiens

<400> 137

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Arg Val Thr Ile Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Lys Asn
            20                  25                  30

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

Ile Phe Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
    50                  55                  60

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

Ala Ala Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
                85                  90                  95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
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<210> 138
<211> 13
<212> PRT
<213> Homo sapiens

<400> 138

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1               5                   10
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<400> 139

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Asp Asn Asn Lys Arg Pro Ser
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<210> 140
<211> 10
<212> PRT
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<400> 140

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Gly Thr Trp Asp Ser Ser Leu Ser Val Val
1               5                   10
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ccaggtgcag cccccaaact cctcatcttt gacaataata agcgaccctc agggactcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tggtcatcac cggactccag 240

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ggcggaggga ccaaggtcac cgtcctag 328

<210> 142
<211> 109
<212> PRT
<213> Homo sapiens

<400> 142

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

Met Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn
20 25 30

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

Ile Phe Asp Asn Asn Lys Arg Pro Ser Gly Thr Pro Asp Arg Phe Ser
50 55 60

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

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Pro Asp Arg Ser Leu
85 90 95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 143
<211> 13
<212> PRT
<213> Homo sapiens

<400> 143

Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 144
<211> 7
<212> PRT
<213> Homo sapiens

<400> 144

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 145
<211> 10
<212> PRT
<213> Homo sapiens

<400> 145

Gly Thr Pro Asp Arg Ser Leu Ser Val Val
1 5 10

<210> 146
<211> 328
<212> DNA
<213> Homo sapiens

<400> 146
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ccaggaacag cccccaaact cctcatttat gacaataata agcgaccccc agggattcct 180

gaccgattct ctggttccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240

actggggacg aggccgatta ttactgcgca acatgggata gaagcctgag tgtggtattc 300

ggcggaggga ccaaggtcac cgtcctag 328

<210> 147
<211> 109
<212> PRT
<213> Homo sapiens

<400> 147

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

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

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

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

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

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Arg Ser Leu
85 90 95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 148
<211> 13
<212> PRT
<213> Homo sapiens

<400> 148

Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 149
<211> 7
<212> PRT
<213> Homo sapiens

<400> 149

Asp Asn Asn Lys Arg Pro Pro
1 5

<210> 150
<211> 10
<212> PRT
<213> Homo sapiens

<400> 150

Ala Thr Trp Asp Arg Ser Leu Ser Val Val
1 5 10

<210> 151
<211> 328
<212> DNA
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ccaggaacag cccccaaact cctcatttat gacaataata agcgaccctc agggattcct 180

gaccgattct ctggttccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240

actggggacg aggccgatta ttactgcgca acatgggata gaagcctgag tgtggtattc 300

ggcggaggga ccaaggtcac cgtcctag 328

<210> 152
<211> 109
<212> PRT
<213> Homo sapiens

<400> 152

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

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

eolf-seql

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

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

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

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Arg Ser Leu
85 90 95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 153
<211> 13
<212> PRT
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<400> 153

Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

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<211> 7
<212> PRT
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<400> 154

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 155
<211> 10
<212> PRT
<213> Homo sapiens

<400> 155

Ala Thr Trp Asp Arg Ser Leu Ser Val Val
1 5 10

<210> 156
<211> 328
<212> DNA
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ccaggtacag cccccaaact cctcattttt gacaataata agcgaccctc aggggttcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tggccatctc cggactccag 240

gctgcggacg aggccgatta ctactgcgga acatgggata gcagcctgag tgtggtattc 300

ggcgggggga ccaaggtcac cgtcctag 328

<210> 157
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<212> PRT
<213> Homo sapiens

<400> 157

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

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

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

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

Ala Ala Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
85 90 95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

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

<400> 158

Ser Gly Ser Arg Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

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<211> 7
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<400> 159

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 160
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<400> 160

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

<210> 161
<211> 331
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ccaggtacag cccccaaact cctcattttt gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tggccatctc cggactccag 240

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<212> PRT
<213> Homo sapiens

<400> 162

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

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

Ile Phe Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
50 55 60

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

Ala Ala Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Asp Leu
85 90 95

Ser Ala Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu
100 105 110

<210> 163
<211> 13
<212> PRT
<213> Homo sapiens

<400> 163

Ser Gly Ser Arg Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 164
<211> 7
<212> PRT
<213> Homo sapiens

<400> 164

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 165
<211> 11
<212> PRT
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<400> 165

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

<210> 166
<211> 328
<212> DNA
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ccaggtacag cccccaaact cctcattttt gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tggccatctc cggactccag 240

gctgcggacg aggccgatta ctactgcgga acatgggata gcagcctgag tgtggtattc 300

ggcgggggga ccaaggtcac cgtcctag 328

<210> 167
<211> 109
<212> PRT
<213> Homo sapiens

<400> 167

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Arg Ser Asn Ile Gly Lys Asn
20 25 30

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

Ile Phe Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
50 55 60

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

Ala Ala Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
85 90 95

Ser Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 168
<211> 13
<212> PRT
<213> Homo sapiens

<400> 168

Ser Gly Ser Arg Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 169
<211> 7
<212> PRT
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Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 170
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<212> PRT
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Gly Thr Trp Asp Ser Ser Leu Ser Val Val
1 5 10

<210> 171
<211> 328
<212> DNA
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ccaggaacag cccccaaact cctcattgat gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240

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ggcggaggga ccaaggtcac cgtcctag 328

<210> 172
<211> 109
<212> PRT
<213> Homo sapiens

<400> 172

eolf-seql

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

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

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

Ile Asp Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
50 55 60

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

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Ser Ser Leu
85 90 95

Gly Val Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
100 105

<210> 173
<211> 13
<212> PRT
<213> Homo sapiens

<400> 173

Ser Gly Asn Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

<210> 174
<211> 7
<212> PRT
<213> Homo sapiens

<400> 174

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 175
<211> 10
<212> PRT
<213> Homo sapiens

<400> 175

Ala Thr Trp Asp Ser Ser Leu Gly Val Val
1 5 10

<210> 176
<211> 328
<212> DNA
<213> Homo sapiens

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ccaggaacag cccccaaact cctcattgat gacaataata agcgaccctc agggattcct 180

gaccgattct ctggctccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 240

actggggacg aggccgatta ttactgcgca acatgggata gcagcctggg tgtggtcttc 300

ggcggaggaa cccagctgat catcctag 328

<210> 177
<211> 109
<212> PRT
<213> Homo sapiens

<400> 177

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

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

Ile Asp Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
50 55 60

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

Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Ser Ser Leu
85 90 95

Gly Val Val Phe Gly Gly Gly Thr Gln Leu Ile Ile Leu
100 105

<210> 178
<211> 13
<212> PRT
<213> Homo sapiens

<400> 178

Ser Gly Ser Ser Ser Asn Ile Gly Lys Asn Tyr Val Ser
1 5 10

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

<400> 179

Asp Asn Asn Lys Arg Pro Ser
1 5

<210> 180
<211> 10
<212> PRT
<213> Homo sapiens

<400> 180

Ala Thr Trp Asp Ser Ser Leu Gly Val Val
1 5 10

<210> 181
<211> 30
<212> PRT
<213> Homo sapiens

<400> 181

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr
20 25 30

<210> 182
<211> 14
<212> PRT
<213> Homo sapiens

<400> 182

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

<210> 183
<211> 32
<212> PRT
<213> Homo sapiens

<400> 183

Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
1 5 10 15

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

<210> 184
<211> 32
<212> PRT
<213> Homo sapiens

<400> 184

Arg Val Thr Ser Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr Met Glu
1 5 10 15

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

<210> 185
<211> 22
<212> PRT
<213> Homo sapiens

<400> 185

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

Lys Val Thr Ile Ser Cys
20

<210> 186
<211> 15
<212> PRT
<213> Homo sapiens

<400> 186

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

<210> 187
<211> 32
<212> PRT
<213> Homo sapiens

<400> 187

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

Leu Gly Ile Thr Gly Leu Gln Thr Gly Asp Glu Ala Asp Tyr Tyr Cys
20 25 30

<210> 188
<211> 20
<212> PRT
<213> Homo sapiens

<400> 188

Tyr Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val
1 5 10 15

Thr Val Ser Ser
20

<210> 189
<211> 16
<212> PRT
<213> Homo sapiens

<400> 189

Asp Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
1 5 10 15

<210> 190

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

<400> 190

Asn Trp Phe Asp Ser Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
1 5 10 15

<210> 191
<211> 16
<212> PRT
<213> Homo sapiens

<400> 191

Asn Trp Phe Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
1 5 10 15

<210> 192
<211> 12
<212> PRT
<213> Homo sapiens

<400> 192

Tyr Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu
1 5 10

<210> 193
<211> 12
<212> PRT
<213> Homo sapiens

<400> 193

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
1 5 10

<210> 194
<211> 12
<212> PRT
<213> Homo sapiens

<400> 194

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
1 5 10

<210> 195
<211> 12
<212> PRT
<213> Homo sapiens

<400> 195

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
1 5 10

<210> 196
<211> 20
<212> DNA

<213> Artificial Sequence

<220>
<223> Primer 179-Je

<400> 196
agagaaccca ctgcttactg 20

<210> 197
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 197

Asn Glu Thr Ile Tyr Asn Thr Thr Leu Lys Tyr Gly Asp Val Val Gly
1 5 10 15

Val

<210> 198
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 074-Je

<400> 198
gtcagwccca gtcaggacac agc 23

<210> 199
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 075-Je

<400> 199
actcctcagt tcaccttctc acm 23

<210> 200
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 076-Je

<400> 200
tcagttagga cccagasgga a 21

<210> 201
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 150-Je

<400> 201
caacaggcag gcaggggcag caag 24

<210> 202
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 151-Je

<400> 202
cacctgcagg tcagggccaa ggtt 24

<210> 203
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 077-Je

<400> 203
ctgaagcttc catggacatg agggtccccg ctcagctcc 39

<210> 204
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 078-Je

<400> 204
ctgaggcttc catgaggctc cctgctcagc tcctggggct g 41

<210> 205
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 007-Je

<400> 205
ctgaagcttc catggaagcc ccagcgcagc ttctcttcct c 41

<210> 206
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 152-Je

<400> 206
ctgaagcttc catggtgttg cagacccagg tcttcatttc tc 42

<210> 207

<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 153-Je

<400> 207
ctgaagcttc catggggtcc caggttcacc tcctcagctt cc 42

<210> 208
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 066-Je

<400> 208
tagagcgctt gatttccacc ttggtccctt gg 32

<210> 209
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 067-Je

<400> 209
tagagcgctt gatctccagc ttggtcccct gg 32

<210> 210
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 068-Je

<400> 210
tagagcgctt gatatccact ttggtcccag gg 32

<210> 211
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 069-Je

<400> 211
tagagcgctt gatctccacc ttggtccctc cg 32

<210> 212
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 070-Je

<400> 212

tagagcgctt aatctccagt cgtgtccctt gg 32

<210> 213
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 258-Je

<400> 213
caggactcag gacaatctcc agc 23

<210> 214
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 259-Je

<400> 214
yyycsggacg tcyycacc 18

<210> 215
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 260-Je

<400> 215
atctgggggk ctyycrcc 18

<210> 216
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 261-Je

<400> 216
gataagcttc catggcctgs tcccctctcc tcctcac 37

<210> 217
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 262-Je

<400> 217
gataagcttc catggcctgg gctctgctcc tcctc 35

<210> 218
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 263-Je

<400> 218
gataagcttc catggcctgg acccctctcc tsctc 35

<210> 219
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 264-Je

<400> 219
gagcctagga cggtgacctt ggtccc 26

<210> 220
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 265-Je

<400> 220
gagcctagga tgatcagctg ggttcctcc 29

<210> 221
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 266-Je

<400> 221
gagcctagga cggtcagctc gctcccctc 29

<210> 222
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 267-Je

<400> 222
gagcctaggg cggtcagctg ggtgcctcc 29

<210> 223
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 84-B

<400> 223
ccctgagagc acagytcctc acc 23

<210> 224

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 155-Je

<400> 224
agtgactcct gtgcmccacc 20

<210> 225
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 85-B

<400> 225
gcactgaaca cagaggcatc a 21

<210> 226
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 161-Je

<400> 226
cmtggayctc mtgyrcraga ac 22

<210> 227
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 162-Je

<400> 227
agggcttcat tttctgtcct ccaccatc 28

<210> 228
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 154-Je

<400> 228
gggcagtcac cagagctcca gaca 24

<210> 229
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 001-Je

<400> 229

ctgaagcttc catggactgg acctggagga tcctcttctt g 41

<210> 230
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 158-Je

<400> 230
ctgaagcttc catggacaca ctttgctcca cgctcctg 38

<210> 231
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 003-Je

<400> 231
ctgaagcttc catggagttt gggctgagct gggttttcct tg 42

<210> 232
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 159-Je

<400> 232
ctgaagcttc catgaaacac ctgtggttct tcctcctsct gg 42

<210> 233
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 156-Je

<400> 233
ctgaagcttc catggggtca accgccatcc tcgccctcct cc 42

<210> 234
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 157-Je

<400> 234
ctgaagcttc catgtctgtc tccttcctca tcttcctgcc cg 42

<210> 235
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 062-Je

<400> 235
tagagcgctg gagacggtga ccagggttcc ctgg 34

<210> 236
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 063-Je

<400> 236
tagagcgctg gagacagtga ccagggtgcc acg 33

<210> 237
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 065-Je

<400> 237
tagagcgcta gagacggtga ccattgtccc ttgg 34

<210> 238
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 064-Je

<400> 238
tagagcgctg gagacggtga ccgtggtgcc ttttt 35

<210> 239
<211> 906
<212> PRT
<213> Homo sapiens

<400> 239

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

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

Ser Ser Thr His Asn Gly Ser His Thr Ser Arg Thr Thr Ser Ala Gln
35 40 45

Thr Arg Ser Val Tyr Ser Gln His Val Thr Ser Ser Glu Ala Val Ser
50 55 60

His Arg Ala Asn Glu Thr Ile Tyr Asn Thr Thr Leu Lys Tyr Gly Asp
65 70 75 80

```
Val Val Gly Val Asn Thr Thr Lys Tyr Pro Tyr Arg Val Cys Ser Met
                85                  90                  95

Ala Gln Gly Thr Asp Leu Ile Arg Phe Glu Arg Asn Ile Ile Cys Thr
            100                 105                 110

Ser Met Lys Pro Ile Asn Glu Asp Leu Asp Glu Gly Ile Met Val Val
        115                 120                 125

Tyr Lys Arg Asn Ile Val Ala His Thr Phe Lys Val Arg Val Tyr Gln
    130                 135                 140

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

Leu Leu Gly Ser Asn Thr Glu Tyr Val Ala Pro Pro Met Trp Glu Ile
                165                 170                 175

His His Ile Asn Lys Phe Ala Gln Cys Tyr Ser Ser Tyr Ser Arg Val
            180                 185                 190

Ile Gly Gly Thr Val Phe Val Ala Tyr His Arg Asp Ser Tyr Glu Asn
        195                 200                 205

Lys Thr Met Gln Leu Ile Pro Asp Asp Tyr Ser Asn Thr His Ser Thr
    210                 215                 220

Arg Tyr Val Thr Val Lys Asp Gln Trp His Ser Arg Gly Ser Thr Trp
225                 230                 235                 240

Leu Tyr Arg Glu Thr Cys Asn Leu Asn Cys Met Leu Thr Ile Thr Thr
                245                 250                 255

Ala Arg Ser Lys Tyr Pro Tyr His Phe Phe Ala Thr Ser Thr Gly Asp
            260                 265                 270

Val Val Tyr Ile Ser Pro Phe Tyr Asn Gly Thr Asn Arg Asn Ala Ser
        275                 280                 285

Tyr Phe Gly Glu Asn Ala Asp Lys Phe Phe Ile Phe Pro Asn Tyr Thr
    290                 295                 300

Ile Val Ser Asp Phe Gly Arg Pro Asn Ala Ala Pro Glu Thr His Arg
305                 310                 315                 320

Leu Val Ala Phe Leu Glu Arg Ala Asp Ser Val Ile Ser Trp Asp Ile
                325                 330                 335

Gln Asp Glu Lys Asn Val Thr Cys Gln Leu Thr Phe Trp Glu Ala Ser
            340                 345                 350
```

```
Glu Arg Thr Ile Arg Ser Glu Ala Glu Asp Ser Tyr His Phe Ser Ser
        355                 360                 365

Ala Lys Met Thr Ala Thr Phe Leu Ser Lys Lys Gln Glu Val Asn Met
    370                 375                 380

Ser Asp Ser Ala Leu Asp Cys Val Arg Asp Glu Ala Ile Asn Lys Leu
385                 390                 395                 400

Gln Gln Ile Phe Asn Thr Ser Tyr Asn Gln Thr Tyr Glu Lys Tyr Gly
                405                 410                 415

Asn Val Ser Val Phe Glu Thr Ser Gly Gly Leu Val Val Phe Trp Gln
            420                 425                 430

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

Ser Ser Leu Asn Ile Thr His Arg Thr Arg Arg Ser Thr Ser Asp Asn
    450                 455                 460

Asn Thr Thr His Leu Ser Ser Met Glu Ser Val His Asn Leu Val Tyr
465                 470                 475                 480

Ala Gln Leu Gln Phe Thr Tyr Asp Thr Leu Arg Gly Tyr Ile Asn Arg
                485                 490                 495

Ala Leu Ala Gln Ile Ala Glu Ala Trp Cys Val Asp Gln Arg Arg Thr
            500                 505                 510

Leu Glu Val Phe Lys Glu Leu Ser Lys Ile Asn Pro Ser Ala Ile Leu
        515                 520                 525

Ser Ala Ile Tyr Asn Lys Pro Ile Ala Ala Arg Phe Met Gly Asp Val
    530                 535                 540

Leu Gly Leu Ala Ser Cys Val Thr Ile Asn Gln Thr Ser Val Lys Val
545                 550                 555                 560

Leu Arg Asp Met Asn Val Lys Glu Ser Pro Gly Arg Cys Tyr Ser Arg
                565                 570                 575

Pro Val Val Ile Phe Asn Phe Ala Asn Ser Ser Tyr Val Gln Tyr Gly
            580                 585                 590

Gln Leu Gly Glu Asp Asn Glu Ile Leu Leu Gly Asn His Arg Thr Glu
        595                 600                 605

Glu Cys Gln Leu Pro Ser Leu Lys Ile Phe Ile Ala Gly Asn Ser Ala
    610                 615                 620
```

Tyr Glu Tyr Val Asp Tyr Leu Phe Lys Arg Met Ile Asp Leu Ser Ser
625 630 635 640

Ile Ser Thr Val Asp Ser Met Ile Ala Leu Asp Ile Asp Pro Leu Glu
645 650 655

Asn Thr Asp Phe Arg Val Leu Glu Leu Tyr Ser Gln Lys Glu Leu Arg
660 665 670

Ser Ser Asn Val Phe Asp Leu Glu Glu Ile Met Arg Glu Phe Asn Ser
675 680 685

Tyr Lys Gln Arg Val Lys Tyr Val Glu Asp Lys Val Val Asp Pro Leu
690 695 700

Pro Pro Tyr Leu Lys Gly Leu Asp Asp Leu Met Ser Gly Leu Gly Ala
705 710 715 720

Ala Gly Lys Ala Val Gly Val Ala Ile Gly Ala Val Gly Gly Ala Val
725 730 735

Ala Ser Val Val Glu Gly Val Ala Thr Phe Leu Lys Asn Pro Phe Gly
740 745 750

Ala Phe Thr Ile Ile Leu Val Ala Ile Ala Val Val Ile Ile Thr Tyr
755 760 765

Leu Ile Tyr Thr Arg Gln Arg Arg Leu Cys Thr Gln Pro Leu Gln Asn
770 775 780

Leu Phe Pro Tyr Leu Val Ser Ala Asp Gly Thr Thr Val Thr Ser Gly
785 790 795 800

Ser Thr Lys Asp Thr Ser Leu Gln Ala Pro Pro Ser Tyr Glu Glu Ser
805 810 815

Val Tyr Asn Ser Gly Arg Lys Gly Pro Gly Pro Pro Ser Ser Asp Ala
820 825 830

Ser Thr Ala Ala Pro Pro Tyr Thr Asn Glu Gln Ala Tyr Gln Met Leu
835 840 845

Leu Ala Leu Ala Arg Leu Asp Ala Glu Gln Arg Ala Gln Gln Asn Gly
850 855 860

Thr Asp Ser Leu Asp Gly Gln Thr Gly Thr Gln Asp Lys Gly Gln Lys
865 870 875 880

Pro Asn Leu Leu Asp Arg Leu Arg His Arg Lys Asn Gly Tyr Arg His
885 890 895

Leu Lys Asp Ser Asp Glu Glu Glu Asn Val
900 905

<210> 240
<211> 907
<212> PRT
<213> Homo sapiens

<400> 240

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

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

Ala Thr His Ser His His Ser Ser His Thr Thr Ser Ala Ala His Ser
35 40 45

Arg Ser Gly Ser Val Ser Gln Arg Val Thr Ser Ser Gln Thr Val Ser
50 55 60

His Gly Val Asn Glu Thr Ile Tyr Asn Thr Thr Leu Lys Tyr Gly Asp
65 70 75 80

Val Val Gly Val Asn Thr Thr Lys Tyr Pro Tyr Arg Val Cys Ser Met
85 90 95

Ala Gln Gly Thr Asp Leu Ile Arg Phe Glu Arg Asn Ile Val Cys Thr
100 105 110

Ser Met Lys Pro Ile Asn Glu Asp Leu Asp Glu Gly Ile Met Val Val
115 120 125

Tyr Lys Arg Asn Ile Val Ala His Thr Phe Lys Val Arg Val Tyr Gln
130 135 140

Lys Val Leu Thr Phe Arg Arg Ser Tyr Ala Tyr Ile His Thr Thr Tyr
145 150 155 160

Leu Leu Gly Ser Asn Thr Glu Tyr Val Ala Pro Pro Met Trp Glu Ile
165 170 175

His His Ile Asn Ser His Ser Gln Cys Tyr Ser Ser Tyr Ser Arg Val
180 185 190

Ile Ala Gly Thr Val Phe Val Ala Tyr His Arg Asp Ser Tyr Glu Asn
195 200 205

Lys Thr Met Gln Leu Met Pro Asp Asp Tyr Ser Asn Thr His Ser Thr
210 215 220

```
Arg Tyr Val Thr Val Lys Asp Gln Trp His Ser Arg Gly Ser Thr Trp
225                 230                 235                 240

Leu Tyr Arg Glu Thr Cys Asn Leu Asn Cys Met Val Thr Ile Thr Thr
                245                 250                 255

Ala Arg Ser Lys Tyr Pro Tyr His Phe Phe Ala Thr Ser Thr Gly Asp
            260                 265                 270

Val Val Asp Ile Ser Pro Phe Tyr Asn Gly Thr Asn Arg Asn Ala Ser
        275                 280                 285

Tyr Phe Gly Glu Asn Ala Asp Lys Phe Phe Ile Phe Pro Asn Tyr Thr
    290                 295                 300

Ile Val Ser Asp Phe Gly Arg Pro Asn Ser Ala Leu Glu Thr His Arg
305                 310                 315                 320

Leu Val Ala Phe Leu Glu Arg Ala Asp Ser Val Ile Ser Trp Asp Ile
                325                 330                 335

Gln Asp Glu Lys Asn Val Thr Cys Gln Leu Thr Phe Trp Glu Ala Ser
            340                 345                 350

Glu Arg Thr Ile Arg Ser Glu Ala Glu Asp Ser Tyr His Phe Ser Ser
        355                 360                 365

Ala Lys Met Thr Ala Thr Phe Leu Ser Lys Lys Gln Glu Val Asn Met
    370                 375                 380

Ser Asp Ser Ala Leu Asp Cys Val Arg Asp Glu Ala Ile Asn Lys Leu
385                 390                 395                 400

Gln Gln Ile Phe Asn Thr Ser Tyr Asn Gln Thr Tyr Glu Lys Tyr Gly
                405                 410                 415

Asn Val Ser Val Phe Glu Thr Thr Gly Gly Leu Val Val Phe Trp Gln
            420                 425                 430

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

Ser Ser Leu Asn Leu Thr His Asn Arg Thr Lys Arg Ser Thr Asp Gly
    450                 455                 460

Asn Asn Ala Thr His Leu Ser Asn Met Glu Ser Val His Asn Leu Val
465                 470                 475                 480

Tyr Ala Gln Leu Gln Phe Thr Tyr Asp Thr Leu Arg Gly Tyr Ile Asn
                485                 490                 495
```

```
Arg Ala Leu Ala Gln Ile Ala Glu Ala Trp Cys Val Asp Gln Arg Arg
            500                 505                 510

Thr Leu Glu Val Phe Lys Glu Leu Ser Lys Ile Asn Pro Ser Ala Ile
        515                 520                 525

Leu Ser Ala Ile Tyr Asn Lys Pro Ile Ala Ala Arg Phe Met Gly Asp
    530                 535                 540

Val Leu Gly Leu Ala Ser Cys Val Thr Ile Asn Gln Thr Ser Val Lys
545                 550                 555                 560

Val Leu Arg Asp Met Asn Val Lys Glu Ser Pro Gly Arg Cys Tyr Ser
                565                 570                 575

Arg Pro Val Val Ile Phe Asn Phe Ala Asn Ser Ser Tyr Val Gln Tyr
            580                 585                 590

Gly Gln Leu Gly Glu Asp Asn Glu Ile Leu Leu Gly Asn His Arg Thr
        595                 600                 605

Glu Glu Cys Gln Leu Pro Ser Leu Lys Ile Phe Ile Ala Gly Asn Ser
    610                 615                 620

Ala Tyr Glu Tyr Val Asp Tyr Leu Phe Lys Arg Met Ile Asp Leu Ser
625                 630                 635                 640

Ser Ile Ser Thr Val Asp Ser Met Ile Ala Leu Asp Ile Asp Pro Leu
                645                 650                 655

Glu Asn Thr Asp Phe Arg Val Leu Glu Leu Tyr Ser Gln Lys Glu Leu
            660                 665                 670

Arg Ser Ser Asn Val Phe Asp Leu Glu Glu Ile Met Arg Glu Phe Asn
        675                 680                 685

Ser Tyr Lys Gln Arg Val Lys Tyr Val Glu Asp Lys Val Val Asp Pro
    690                 695                 700

Leu Pro Pro Tyr Leu Lys Gly Leu Asp Asp Leu Met Ser Gly Leu Gly
705                 710                 715                 720

Ala Ala Gly Lys Ala Val Gly Val Ala Ile Gly Ala Val Gly Gly Ala
                725                 730                 735

Val Ala Ser Val Val Glu Gly Val Ala Thr Phe Leu Lys Asn Pro Phe
            740                 745                 750

Gly Ala Phe Thr Ile Ile Leu Val Ala Ile Ala Val Val Ile Ile Ile
        755                 760                 765
```

```
Tyr Leu Ile Tyr Thr Arg Gln Arg Arg Leu Cys Met Gln Pro Leu Gln
    770                 775                 780

Asn Leu Phe Pro Tyr Leu Val Ser Ala Asp Gly Thr Thr Val Thr Ser
785                 790                 795                 800

Gly Asn Thr Lys Asp Thr Ser Leu Gln Ala Pro Pro Ser Tyr Glu Glu
                805                 810                 815

Ser Val Tyr Asn Ser Gly Arg Lys Gly Pro Gly Pro Pro Ser Ser Asp
            820                 825                 830

Ala Ser Thr Ala Ala Pro Pro Tyr Thr Asn Glu Gln Ala Tyr Gln Met
        835                 840                 845

Leu Leu Ala Leu Val Arg Leu Asp Ala Glu Gln Arg Ala Gln Gln Asn
    850                 855                 860

Gly Thr Asp Ser Leu Asp Gly Gln Thr Gly Thr Gln Asp Lys Gly Gln
865                 870                 875                 880

Lys Pro Asn Leu Leu Asp Arg Leu Arg His Arg Lys Asn Gly Tyr Arg
                885                 890                 895

His Leu Lys Asp Ser Asp Glu Glu Glu Asn Val
            900                 905
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<210> 241
<211> 375
<212> DNA
<213> Homo sapiens

<400> 241

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caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc      60

acctgcactg tctctggtgg ctccatcggc gttggtgact cctactgggg ctggctccgc     120

cagtccccag ggaagggact ggagtcgatt gggagtatat attttactgg gaccaccctc     180

tacaacccgt ccttcaagag tcgagtcacc atatccgtag acccgcccaa gaagcagttc     240

tccctgaacc tgaagtctgt gaccgccgca gacacggcta tttactattg cgccagacac     300

gcctatgact tttgggttcg tggggtgtcc tggatcgccc cctggggccc gggaattttg     360

gtcaccgtct cctca                                                      375
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<210> 242
<211> 125
<212> PRT
<213> Homo sapiens

<400> 242

```
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 Gly Val Gly
            20                  25                  30

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

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

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

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

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

Ala Pro Trp Gly Pro Gly Ile Leu Val Thr Val Ser Ser
        115                 120                 125
```

<210> 243
<211> 7
<212> PRT
<213> Homo sapiens

<400> 243

```
Val Gly Asp Ser Tyr Trp Gly
1               5
```

<210> 244
<211> 16
<212> PRT
<213> Homo sapiens

<400> 244

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

<210> 245
<211> 15
<212> PRT
<213> Homo sapiens

<400> 245

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

<210> 246
<211> 375
<212> DNA
<213> Homo sapiens

<400> 246
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60

acctgcactg tctctggtgg ctccatgagt agttactact ggagctggat ccggcagccc 120

ccagggaagg gactggagtg gattggatat atctattaca gtgggagcac caactacaac 180

ccctccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttctccctg 240

aagctgagct ctgtgaccgc tgcggacacg gccgtgtatt actgtgcgag agacgtgcgt 300

agcagcagcc ctccagtcta ctactactac ggtatggacg tctggggcca agggaccacg 360

gtcaccgtct cctca 375

<210> 247
<211> 125
<212> PRT
<213> Homo sapiens

<400> 247

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 Met Ser Ser Tyr
20 25 30

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

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

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

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

Arg Asp Val Arg Ser Ser Ser Pro Pro Val Tyr Tyr Tyr Tyr Gly Met
100 105 110

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

<210> 248
<211> 5
<212> PRT
<213> Homo sapiens

<400> 248

Ser Tyr Tyr Trp Ser
1 5

<210> 249
<211> 16

<212> PRT
<213> Homo sapiens

<400> 249

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

<210> 250
<211> 17
<212> PRT
<213> Homo sapiens

<400> 250

Asp Val Arg Ser Ser Ser Pro Pro Val Tyr Tyr Tyr Tyr Gly Met Asp
1 5 10 15

Val

<210> 251
<211> 390
<212> DNA
<213> Homo sapiens

<400> 251
caggtgcagc tgcaggagtc gggcccggga ctggtgaagc cttcggagac cctgtccctc 60

atctgcactg tctctggtgc ccccattagg agttactact ggagctggat ccggcagtcc 120

ccaggaaggg gactggagta cattgggtgt atcaacacca atgggaggtc caactacaac 180

ccctccctca ggggtcgagt caccatatca gtggactcgt cccagaatca gttctccctg 240

acggtcagct ctctgaccgc agcggacacg gccgtgtatt actgtgcgac tgcaagccaa 300

caccgctacg attctttgac tggctcttat cgctattatc cctatgtaat ggacgtctgg 360

ggccgcggga ccacggtcac cgtttcctca 390

<210> 252
<211> 130
<212> PRT
<213> Homo sapiens

<400> 252

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

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

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

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

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

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

Thr Ala Ser Gln His Arg Tyr Asp Ser Leu Thr Gly Ser Tyr Arg Tyr
100 105 110

Tyr Pro Tyr Val Met Asp Val Trp Gly Arg Gly Thr Thr Val Thr Val
115 120 125

Ser Ser
130

<210> 253
<211> 5
<212> PRT
<213> Homo sapiens

<400> 253

Ser Tyr Tyr Trp Ser
1 5

<210> 254
<211> 16
<212> PRT
<213> Homo sapiens

<400> 254

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

<210> 255
<211> 22
<212> PRT
<213> Homo sapiens

<400> 255

Ala Ser Gln His Arg Tyr Asp Ser Leu Thr Gly Ser Tyr Arg Tyr Tyr
1 5 10 15

Pro Tyr Val Met Asp Val
20

<210> 256
<211> 360
<212> DNA
<213> Homo sapiens

<400> 256
cagctgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60

acctgcactg tgtctggtgc ctccatcgac aggagtactt actactgggg ctggatccgc 120

cagccccag ggaagggcct ggaatggatt gcaaatatct attataatgg gagggccgtc 180

tacagcccgt ccctcaagag tcgagtcacc atatcagtag acacgtccaa gaatcagttc 240

tccctgaagg tgaggtctct gaccgccgca gacacggctg tgtattattg tgcgacccgg 300

tggaattatt tcttcgactt tgactattgg ggccggggaa ccctggtcac cgtctcctca 360

<210> 257
<211> 120
<212> PRT
<213> Homo sapiens

<400> 257

Gln Leu 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 Asp Arg Ser
20 25 30

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

Trp Ile Ala Asn Ile Tyr Tyr Asn Gly Arg Ala Val Tyr Ser Pro Ser
50 55 60

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

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

Cys Ala Thr Arg Trp Asn Tyr Phe Phe Asp Phe Asp Tyr Trp Gly Arg
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 258
<211> 7
<212> PRT
<213> Homo sapiens

<400> 258

Arg Ser Thr Tyr Tyr Trp Gly
1 5

<210> 259
<211> 16
<212> PRT
<213> Homo sapiens

<400> 259

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

<210> 260
<211> 10
<212> PRT
<213> Homo sapiens

<400> 260

Arg Trp Asn Tyr Phe Phe Asp Phe Asp Tyr
1 5 10

<210> 261
<211> 336
<212> DNA
<213> Homo sapiens

<400> 261
gatattgtga tgacccaatc tccactctcc ctgcccgtca cccctggaga gccggcctcc 60

atctcctgca ggtctagtca gaccctcctg catagtaatg gaaacaatta tttggattgg 120

tacctacaga agccagggca gtctccgcaa ctcctgatct attatgcttc taatcgggcc 180

tccggggtcc ctgacaggtt cagtggcagt ggttcaggca catctttcac actgaaaatc 240

agcagagtgg gggctgaaga tgttggggtt tattactgca tgcaagctct acaatctccg 300

ctcactttcg gcggagggac caagctggag atcaaa 336

<210> 262
<211> 112
<212> PRT
<213> Homo sapiens

<400> 262

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

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Thr Leu Leu His Ser
20 25 30

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

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

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

Ser Arg Val Gly Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala
85 90 95

Leu Gln Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 263
<211> 16

<212> PRT
<213> Homo sapiens

<400> 263

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

<210> 264
<211> 7
<212> PRT
<213> Homo sapiens

<400> 264

Tyr Ala Ser Asn Arg Ala Ser
1 5

<210> 265
<211> 9
<212> PRT
<213> Homo sapiens

<400> 265

Met Gln Ala Leu Gln Ser Pro Leu Thr
1 5

<210> 266
<211> 336
<212> DNA
<213> Homo sapiens

<400> 266
gatattgtga tgactcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc 60

atctcctgca ggtctagtca gagcctcctg catagtaatg gatacaacta tttggattgg 120

tacctgcaga agccagggca gtctccacag ctcctgatct atttgggttc taatcgggcc 180

tccggggtcc ctgacaggtt cagtggcagt ggattaggca cagattttac actgaaaatc 240

agcagagtgg aggctgagga tgttggggtt tattactgca tgcaagctct acaaactcct 300

cggacttttg gccaggggac caagctggag atcaaa 336

<210> 267
<211> 112
<212> PRT
<213> Homo sapiens

<400> 267

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

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
20 25 30

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

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

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

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala
85 90 95

Leu Gln Thr Pro Arg Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 268
<211> 16
<212> PRT
<213> Homo sapiens

<400> 268

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

<210> 269
<211> 7
<212> PRT
<213> Homo sapiens

<400> 269

Leu Gly Ser Asn Arg Ala Ser
1 5

<210> 270
<211> 9
<212> PRT
<213> Homo sapiens

<400> 270

Met Gln Ala Leu Gln Thr Pro Arg Thr
1 5

<210> 271
<211> 321
<212> DNA
<213> Homo sapiens

<400> 271
gacatccaga tgacccagtc tccatcctcc ctgtatgcat ctgtaggaga cagagtcacc 60

atcacttgcc aggcgagtca ggacattagg aagtctttaa attggtatca gaagaaagta 120

gggatagccc ctaaagtcct gatctacgac gcatccaatt tggaaacagg cgtcccatca 180

aggttcagtg gaagtggatc tgggacacat tttaccttca ccatcggcag cctgcagcct 240

gaagattttg caacatatta ctgtcaacat tacgataatt ttccgcccac tttcggcgga 300

gggaccaagg tggagatcaa a 321

<210> 272
<211> 107
<212> PRT
<213> Homo sapiens

<400> 272

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

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

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

Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60

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

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

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105
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<210> 273
<211> 11
<212> PRT
<213> Homo sapiens

<400> 273

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

<210> 274
<211> 7
<212> PRT
<213> Homo sapiens

<400> 274

```
Asp Ala Ser Asn Leu Glu Thr
1               5
```

<210> 275
<211> 9
<212> PRT
<213> Homo sapiens

<400> 275

```
Gln His Tyr Asp Asn Phe Pro Pro Thr
1               5
```

<210> 276
<211> 324
<212> DNA
<213> Homo sapiens

<400> 276
cagtctgtgc tgactcagcc accctcagcg tctgggaccc ccgggcagag ggtcaccatc 60

tcttgttctg gaagcagttc caacatcgaa actaattatg tatcctggta ccagcagttc 120

ccaggaacgg cccccaagct cctcatctat aggaataatc agcggccctc aggggtccct 180

gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccgg 240

tccgaggatg aggctgagta ttactgtgga acgtgggatg acaattcctg ggtgttcggc 300

ggagggacca agctgaccgt ccta 324

<210> 277
<211> 108
<212> PRT
<213> Homo sapiens

<400> 277

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Glu Thr Asn
20 25 30

Tyr Val Ser Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

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

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

Ser Glu Asp Glu Ala Glu Tyr Tyr Cys Gly Thr Trp Asp Asp Asn Ser
85 90 95

Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105

<210> 278
<211> 13
<212> PRT
<213> Homo sapiens

<400> 278

Ser Gly Ser Ser Ser Asn Ile Glu Thr Asn Tyr Val Ser
1 5 10

<210> 279
<211> 7

<212> PRT
<213> Homo sapiens

<400> 279

Arg Asn Asn Gln Arg Pro Ser
1 5

<210> 280
<211> 9
<212> PRT
<213> Homo sapiens

<400> 280

Gly Thr Trp Asp Asp Asn Ser Trp Val
1 5

<210> 281
<211> 30
<212> PRT
<213> Homo sapiens

<400> 281

Gln Leu 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
20 25 30

<210> 282
<211> 14
<212> PRT
<213> Homo sapiens

<400> 282

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

<210> 283
<211> 32
<212> PRT
<213> Homo sapiens

<400> 283

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

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

<210> 284
<211> 30
<212> PRT
<213> Homo sapiens

<400> 284

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Val Ser
            20                  25                  30
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<210> 285
<211> 14
<212> PRT
<213> Homo sapiens

<400> 285

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

<210> 286
<211> 32
<212> PRT
<213> Homo sapiens

<400> 286

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

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

<210> 287
<211> 23
<212> PRT
<213> Homo sapiens

<400> 287

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

Glu Pro Ala Ser Ile Ser Cys
            20
```

<210> 288
<211> 15
<212> PRT
<213> Homo sapiens

<400> 288

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

<210> 289
<211> 32
<212> PRT
<213> Homo sapiens

<400> 289

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

Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys
20 25 30

<210> 290
<211> 23
<212> PRT
<213> Homo sapiens

<400> 290

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
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<210> 291
<211> 15
<212> PRT
<213> Homo sapiens

<400> 291

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

<210> 292
<211> 32
<212> PRT
<213> Homo sapiens

<400> 292

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

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

<210> 293
<211> 22
<212> PRT
<213> Homo sapiens

<400> 293

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

Arg Val Thr Ile Ser Cys
20

<210> 294
<211> 15
<212> PRT
<213> Homo sapiens

<400> 294

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

<210> 295
<211> 32
<212> PRT
<213> Homo sapiens

<400> 295

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

Leu Ala Ile Ser Gly Leu Arg Ser Glu Asp Glu Ala Asp Tyr Tyr Cys
20 25 30

<210> 296
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Ig L VH 4/6

<400> 296
cccagatggg tcctgtccca ggtgcag 27

<210> 297
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Ig L V kappa 1/2

<400> 297
atgaggstcc cygctcagct gctg 24

<210> 298
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Ig L V lambda 3

<400> 298
gctctgtgac ctcctatgag ctg 23

<210> 299
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Ig L V lambda 1

<400> 299
ggtcctgggc ccagtctgtg ctg 23

<210> 300
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'Ig C gamma CH 1

<400> 300
ggaaggtgtg cacgccgctg gtc 23

<210> 301
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'Ig C kappa 543

<400> 301
gtttctcgta gtctgctttg ctca 24

<210> 302
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'Ig C lambda chain

<400> 302
caccagtgtg gccttgttgg cttg 24

<210> 303
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Ig AgeI VH4

<400> 303
ctgcaaccgg tgtacattcc caggtgcagc tgcaggag 38

<210> 304
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Ig AgeI V kappa 2-24

<400> 304
ctgcaaccgg tgtacatggg gatattgtga tgacccaga 39

<210> 305
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Ig AgeI V kappa 2-28

<400> 305
ctgcaaccgg tgtacatggg gatattgtga tgactcagtc 40

<210> 306
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Ig AgeI V lambda 3

<400> 306
ctgctaccgg ttctgtgacc tcctatgagc tgacwcag 38

<210> 307
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Ig AgeI V kappa 1-5

<400> 307
ctgcaaccgg tgtacattct gacatccaga tgacccagtc 40

<210> 308
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Ig AgeI VH 4-39

<400> 308
ctgcaaccgg tgtacattcc cagctgcagc tgcaggag 38

<210> 309
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Ig AgeI V lambda 1

<400> 309
ctgctaccgg ttcctgggcc cagtctgtgc tgackcag 38

<210> 310
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'Ig SalI JH

<400> 310
tgcgaagtcg acgctgagga gacggtgacc ag 32

<210> 311
<211> 30
<212> DNA

<213> Artificial Sequence

<220>
<223> Primer 3'Ig BsiWI J kappa 2

<400> 311
gccaccgtac gtttgatctc cagcttggtc 30

<210> 312
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'Ig SalI JH 6

<400> 312
tgcgaagtcg acgctgagga gacggtgacc gtg 33

<210> 313
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'Ig Bsi WIJ kappa 1/4

<400> 313
gccaccgtac gtttgatytc caccttggtc 30

<210> 314
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'Ig XhoI C lambda

<400> 314
ctcctcactc gagggyggga acagagtg 28

<210> 315
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'Absense

<400> 315
gcttcgttag aacgcggcta c 21

<210> 316
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'IgG internal

<400> 316
gttcggggaa gtagtccttg ac 22

<210> 317
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'C kappa 494

<400> 317
gtgctgtcct tgctgtcctg ct 22

<210> 318
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'C lambda

<400> 318
caccagtgtg gccttgttgg cttg 24

<210> 319
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Linker sequence

<400> 319

Ile Ala Gly Ser Gly
1 5

<210> 320
<211> 27
<212> PRT
<213> Homo sapiens

<400> 320

Met Pro Ala Pro Arg Gly Leu Leu Arg Ala Thr Phe Leu Val Leu Val
1 5 10 15

Ala Phe Gly Leu Leu Leu His Ile Asp Phe Ser
20 25

<210> 321
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> HA tag

<400> 321

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
1 5