SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> Human Antibodies to the Glucagon Receptor

<130> 1400A-WO

<140> To be assigned
<141> Filed herewith

<150> 61/416,409
<151> 2010-11-23

<150> 61/481,958
<151> 2011-05-03

<150> 61/551,032
<151> 2011-10-25

<160> 207

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tcctgcaagg tttccggaca tatcctcact gatttatcca tgcactgggt gcgacagcct 120
cctggaaaag gacttgagtg gatggcaggt tttgatcctg aagaaggtaa aataatctac 180
gcacagaagt tccagggcag agtcaccatg accgaggaca catctacaga cacagcctac 240
atggagctga gcagcctgag atctggggac acggccgttt attactgtgc aacaagcgat 300
attttgactg ggtattatag agactactac ggtttggacg tctggggcca agggaccacg 360
ctcaccgtct cctca 375

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<220>
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<400> 2
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Ser Val Lys Val Ser Cys Lys Val Ser Gly His Ile Leu Thr Asp Leu
            20   25   30
Ser Met His Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Met
        35   40   45

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Ala Gly Phe Asp Pro Glu Glu Gly Lys Ile Ile Tyr Ala Gln Lys Phe
    50                  55                  60
Gln Gly Arg Val Thr Met Thr Glu Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Gly Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Thr Ser Asp Ile Leu Thr Gly Tyr Tyr Arg Asp Tyr Tyr Gly Leu
            100                 105                 110
Asp Val Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
        115                 120                 125
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<400> 3
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<210> 4
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<212> PRT
<213> Artificial Sequence

<220>
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<220>
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<400> 5
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<210> 6
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<212> PRT
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<400> 6
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Phe Asp Pro Glu Glu Gly Lys Ile
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<210> 7
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<220>
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<400> 7
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<210> 8
<211> 18
<212> PRT
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<220>
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<400> 8
Ala Thr Ser Asp Ile Leu Thr Gly Tyr Tyr Arg Asp Tyr Tyr Gly Leu
1 5 10 15
Asp Val

<210> 9
<211> 336
<212> DNA
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<220>
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<400> 9
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tacctgcaga agccagggca gtctccacaa ctcctgatct atttgggttc taatcgggcc 180
tccggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttac actgaaaatc 240
agcagagtgg aggctgaaga tgttggggtt tattactgca tgcaaactct acaaactcct 300
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<210> 10
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<400> 10
Asp Ile Val Met Thr Gln Ser Pro Leu Phe 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
Lys 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 Ser Gly Thr Asp Phe Thr Leu Lys Ile
65                  70                  75                  80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Thr
                85                  90                  95
Leu Gln Thr Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100                 105                 110
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<210> 12
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<400> 12
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 1               5                  10
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<210> 13
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<212> DNA
<213> Artificial Sequence

<220>
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<400> 13
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<210> 14
<211> 3
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<220>
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<400> 14
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<400> 16
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1 5

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tcctgcaagg tttccggaca tatcctcact gatttatcca tgcactgggt gcgacaggct 120
cctggaaaag ggcttgagtg gatgggaggt tttgatcctg aagaaggtga aataatctac 180
gcacagaagt tccagggcag agtcaccatg accgaggaca catctacaga cacagcctac 240
atggagctga gcagcctgag atctggggac acggccgttt attactgtgc aacaagcgat 300
attttgactg gttattatag agactactac ggtttggacg tctggggcca agggaccacg 360
ctcaccgtct cctca 375

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<211> 125
<212> PRT
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<220>
<223> Synthetic

<400> 18
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1 5 10 15
Ser Val Lys Val Ser Cys Lys Val Ser Gly His Ile Leu Thr Asp Leu
20 25 30
Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Met
35 40 45
Gly Gly Phe Asp Pro Glu Glu Gly Glu Ile Ile Tyr Ala Gln Lys Phe

```
    50                  55                  60
Gln Gly Arg Val Thr Met Thr Glu Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Gly Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Thr Ser Asp Ile Leu Thr Gly Tyr Tyr Arg Asp Tyr Tyr Gly Leu
            100                 105                 110
Asp Val Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
        115                 120                 125
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<220>
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<400> 19
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<210> 20
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
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<400> 20
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Gly His Ile Leu Thr Asp Leu Ser
 1               5
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<210> 21
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<212> DNA
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<220>
<223> Synthetic

<400> 21
tttgatcctg aagaaggtga aata 24

<210> 22
<211> 8
<212> PRT
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<220>
<223> Synthetic

<400> 22
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Phe Asp Pro Glu Glu Gly Glu Ile
 1               5
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<210> 23
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<212> DNA
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<400> 23
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<210> 24
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
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<400> 24
Ala Thr Ser Asp Ile Leu Thr Gly Tyr Tyr Arg Asp Tyr Tyr Gly Leu
1 5 10 15
Asp Val

<210> 25
<211> 336
<212> DNA
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tacctgcaga agccagggca gtctccacaa ctcctgatct atttgggttc taatcgggcc 180
tccggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttac actgaaaatc 240
agcagagtgg aggctgaaga tgttggggtt tattactgca tgcaaactct acaaactcct 300
cggacgttcg gccaagggac caaggtggaa atcaaa 336

<210> 26
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<220>
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<400> 26
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1 5 10 15
Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
20 25 30
Lys 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 Ser Gly Thr Asp Phe Thr Leu Lys Ile
65                  70                  75                  80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Thr
                85                  90                  95
Leu Gln Thr Pro Arg Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100                 105                 110


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

<220>
<223> Synthetic

<400> 27
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<210> 28
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<220>
<223> Synthetic

<400> 28
Gln Ser Leu Leu His Ser Lys Gly Tyr Asn Tyr
 1               5                  10


<210> 29
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 29
ttgggttct                                                              9

<210> 30
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 30
Leu Gly Ser
 1
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<210> 31
<211> 27
<212> DNA
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<220>
<223> Synthetic

<400> 31
atgcaaactc tacaaactcc tcggacg 27

<210> 32
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 32
Met Gln Thr Leu Gln Thr Pro Arg Thr
1 5

<210> 33
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
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<400> 33
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tcctgtgcag cctctggatt cactctcagt agttatgaaa tgaactgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtttcatac attagtagag gtggtagtct gatacactac 180
acagactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ttcactgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgttt attactgtgt gagagaccca 300
gcagctcgtt atcattatta ttatcacggt atggacgtct ggggccaagg gaccacggtc 360
accgtctcct ca 372

<210> 34
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<212> PRT
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<220>
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<400> 34
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1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Leu Ser Ser Tyr
20 25 30
Glu Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Tyr Ile Ser Arg Gly Gly Ser Leu Ile His Tyr Thr Asp Ser Val
50 55 60

```
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Val Arg Asp Pro Ala Ala Arg Tyr His Tyr Tyr Tyr His Gly Met Asp
            100                 105                 110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
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<220>
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<400> 35
ggattcactc tcagtagtta tgaa 24

<210> 36
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 36
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Gly Phe Thr Leu Ser Ser Tyr Glu
 1               5
```

<210> 37
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 37
attagtagag gtggtagtct gata 24

<210> 38
<211> 8
<212> PRT
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<220>
<223> Synthetic

<400> 38
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Ile Ser Arg Gly Gly Ser Leu Ile
 1               5
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<210> 39
<211> 51
<212> DNA
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<220>
<223> Synthetic

<400> 39
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<210> 40
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
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<400> 40
Val Arg Asp Pro Ala Ala Arg Tyr His Tyr Tyr Tyr His Gly Met Asp
1 5 10 15
Val

<210> 41
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 41
gatattgtga tgactcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc 60
atctcctgca ggtctagtca gagcctcctg cacaataatg gatataacta tttggattgg 120
tatctgcaga agccagggca gtctccacag ctcctgatct atttgggttc tagtcgggcc 180
tccggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttat actgaaaatc 240
agcagagtgg aggctgaaga tgttggggtt tattactgca tgcaagctct acaaactccg 300
tggacgttcg gccgagggac caaggtggaa atcaaa 336

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<213> Artificial Sequence

<220>
<223> Synthetic

<400> 42
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 Asn
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 Ser Arg Ala Ser Gly Val Pro

```
    50                  55                  60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Ile 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 Trp Thr Phe Gly Arg Gly Thr Lys Val Glu Ile Lys
            100                 105                 110


<210> 43
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 43
cagagcctcc tgcacaataa tggatataac tat                                    33

<210> 44
<211> 11
<212> PRT
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<220>
<223> Synthetic

<400> 44
Gln Ser Leu Leu His Asn Asn Gly Tyr Asn Tyr
 1               5                   10


<210> 45
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 45
ttgggttct                                                               9

<210> 46
<211> 3
<212> PRT
<213> Artificial Sequence

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<223> Synthetic

<400> 46
Leu Gly Ser
 1


<210> 47
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<211> 27
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<213> Artificial Sequence

<220>
<223> Synthetic

<400> 47
atgcaagctc tacaaactcc gtggacg 27

<210> 48
<211> 9
<212> PRT
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<220>
<223> Synthetic

<400> 48
Met Gln Ala Leu Gln Thr Pro Trp Thr
1 5

<210> 49
<211> 384
<212> DNA
<213> Artificial Sequence

<220>
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<400> 49
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tcctgtgcag cctctggatt caccttcagt agttatgaca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatcatctg atggacgtga taaatactat 180
gtagactccg tgaagggccg attcaccatc tccagagaca actccaagaa cacgctttat 240
ctgcaaatga acagcctgag agctgaggac acggctgttt attactgtgc gaaagagatg 300
gtgtattacg atattttgac tggttatcat aactactacg gtatggacgt ctggggccaa 360
gggaccacgg tcaccgtctc ctca 384

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<220>
<223> Synthetic

<400> 50
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30
Asp Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Val Ile Ser Ser Asp Gly Arg Asp Lys Tyr Tyr Val Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr

```
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Lys Glu Met Val Tyr Tyr Asp Ile Leu Thr Gly Tyr His Asn Tyr
            100                 105                 110
Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125


<210> 51
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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<400> 51
ggattcacct tcagtagtta tgac                                          24

<210> 52
<211> 8
<212> PRT
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<220>
<223> Synthetic

<400> 52
Gly Phe Thr Phe Ser Ser Tyr Asp
 1               5


<210> 53
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 53
atatcatctg atggacgtga taaa                                          24

<210> 54
<211> 8
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<220>
<223> Synthetic

<400> 54
Ile Ser Ser Asp Gly Arg Asp Lys
 1               5


<210> 55
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<211> 63
<212> DNA
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<220>
<223> Synthetic

<400> 55
gcgaaagaga tggtgtatta cgatattttg actggttatc ataactacta cggtatggac 60
gtc 63

<210> 56
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 56
Ala Lys Glu Met Val Tyr Tyr Asp Ile Leu Thr Gly Tyr His Asn Tyr
 1 5 10 15
Tyr Gly Met Asp Val
 20

<210> 57
<211> 324
<212> DNA
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<220>
<223> Synthetic

<400> 57
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gggaaagccc ctaagtccct gatccatact gcatccagtt tgcaaagtgg ggtcccatca 180
aagttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgccaacag tataatactt accctctcac tttcggcgga 300
gggaccaaag tggagatcaa acga 324

<210> 58
<211> 108
<212> PRT
<213> \Artificial Sequence

<220>
<223> Synthetic

<400> 58
Asp Ile Val Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Asn Asn Tyr
 20 25 30
Leu Ala Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile
 35 40 45
His Thr Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly

```
    50                  55                  60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Thr Tyr Pro Leu
                85                  90                  95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg
            100                 105
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<210> 59
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 59
cagggcatta acaattat 18

<210> 60
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 60
Gln Gly Ile Asn Asn Tyr
 1   5

<210> 61
<211> 9
<212> DNA
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<220>
<223> Synthetic

<400> 61
actgcatcc 9

<210> 62
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 62
Thr Ala Ser
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<210> 63

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

<220>
<223> Synthetic

<400> 63
caacagtata atacttaccc tctcact 27

<210> 64
<211> 9
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<220>
<223> Synthetic

<400> 64
Gln Gln Tyr Asn Thr Tyr Pro Leu Thr
1 5

<210> 65
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<212> DNA
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<400> 65
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
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ccaggcaagg ggctggagtg ggtggcagtt atatcatctg atggacgtga taaatactat 180
gtagactccg tgaagggccg attcaccatc tccagagaca actccaagaa cacgctttat 240
ctgcaaatga acagcctgag agctgaggac acggctgttt attactgtgc gaaagagatg 300
gtgtattacg atattttgac tggttatcat aactactacg gtatggacgt ctggggccaa 360
gggaccacgg tcaccgtctc c 381

<210> 66
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<212> PRT
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<220>
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<400> 66
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30
Asp Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Val Ile Ser Ser Asp Gly Arg Asp Lys Tyr Tyr Val Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr

```
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Lys Glu Met Val Tyr Tyr Asp Ile Leu Thr Gly Tyr His Asn Tyr
            100                 105                 110
Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser
        115                 120                 125
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<210> 67
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<212> DNA
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<220>
<223> Synthetic

<400> 67
gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggcattaac aattatttag cctggtttca gcagaaacca 120
gggaaagccc ctaagtccct gatccatact gcatccagtt tgcaaagtgg ggtcccatca 180
aagttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgccaacag tataatactt accctctcac tttcggcgga 300
gggaccaagg tggagatcaa a 321

<210> 68
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<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 68
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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 Gly Ile Asn Asn Tyr
            20                  25                  30
Leu Ala Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile
        35                  40                  45
His Thr Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Thr Tyr Pro Leu
                85                  90                  95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105
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<210> 69
<211> 384
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 69
caggtgcagc tggtgcagtc tgggggaggc ttggtccagc ctggggggtc cctgagactc 60
tcctgtgcag cctccggatt cacctttagt aactatttga tgaactgggt ccgccaggct 120
ccagggaagg ggctggagtg gctggccaac atacaggaag atggaattga gaaatactat 180
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagagccc 300
tcccattacg atattttgac tggttatgac tactattacg gtatggacgt ctggggccaa 360
gggaccacgg tcaccgtctc ctca 384

<210> 70
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 70
Gln Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
20 25 30
Leu Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Leu
35 40 45
Ala Asn Ile Gln Glu Asp Gly Ile Glu Lys Tyr Tyr Val Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Glu Pro Ser His Tyr Asp Ile Leu Thr Gly Tyr Asp Tyr Tyr
100 105 110
Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 71
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 71
ggattcacct ttagtaacta tttg 24

<210> 72
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 72
Gly Phe Thr Phe Ser Asn Tyr Leu
1 5

<210> 73
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 73
atacaggaag atggaattga gaaa 24

<210> 74
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 74
Ile Gln Glu Asp Gly Ile Glu Lys
1 5

<210> 75
<211> 63
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 75
gcgagagagc cctcccatta cgatattttg actggttatg actactatta cggtatggac 60
gtc 63

<210> 76
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 76
Ala Arg Glu Pro Ser His Tyr Asp Ile Leu Thr Gly Tyr Asp Tyr Tyr
1 5 10 15
Tyr Gly Met Asp Val
20

<210> 77
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 77
gacatccagt tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaagcgcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcattctca cagtcagcag cctgcagcct 240
gaagactttg caacttatta ctgtctacag tataatagta acccattcac tttcggccct 300
gggaccaagg tggagatcaa acga 324

<210> 78
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 78
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Asp
20 25 30
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
35 40 45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Glu Phe Ile Leu Thr Val Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asn Ser Asn Pro Phe
85 90 95
Thr Phe Gly Pro Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 79
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 79
cagggcatta gaaatgat 18

<210> 80
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 80
Gln Gly Ile Arg Asn Asp
1 5

<210> 81
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 81
gctgcatcc 9

<210> 82
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 82
Ala Ala Ser
1

<210> 83
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 83
ctacagtata atagtaaccc attcact 27

<210> 84
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 84
Leu Gln Tyr Asn Ser Asn Pro Phe Thr
1 5

<210> 85
<211> 381
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 85
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60
tcctgtgcag cctccggatt cacctttagt aactatttga tgaactgggt ccgccaggct 120
ccagggaagg ggctggagtg gctggccaac atacaggaag atggaattga gaaatactat 180
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagagccc 300
tcccattacg atattttgac tggttatgac tactattacg gtatggacgt ctggggccaa 360
gggaccacgg tcaccgtctc c 381

<210> 86
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 86
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
            20   25   30
Leu Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Leu
        35   40   45
Ala Asn Ile Gln Glu Asp Gly Ile Glu Lys Tyr Tyr Val Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Glu Pro Ser His Tyr Asp Ile Leu Thr Gly Tyr Asp Tyr Tyr
            100   105   110
Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser
        115   120   125

<210> 87
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 87
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaagcgcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcattctca cagtcagcag cctgcagcct 240
gaagactttg caacttatta ctgtctacag tataatagta acccattcac tttcggccct 300
gggaccaaag tggatatcaa a 321

<210> 88
<211> 107
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 88
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Asp
            20   25   30
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Glu Phe Ile Leu Thr Val Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln Tyr Asn Ser Asn Pro Phe
                85   90   95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100   105

<210> 89
<211> 381
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 89
gaggtgcagc tggtgcagtc tgggggagcc ttggtacagc ctgggggtc cctgagactc 60
tcctgtacag cctctggttt caccttcagt aactacgaca tgcactgggt ccgccaaact 120
acaggaaaag gtctggagtg gatctcagct attgatactg ctggtgacac atactatcca 180
ggctccgtga agggccgatt caccgtctcc agagaaaatg ccaagaactc cttttatctt 240
caaatgaaca gcctgagagc cggggacacg gctgtgtatt actgtgcaag ggaggggaag 300
tattacgata ttttgactgg tgactaccac tactacggta tggacgtctg gggccaaggg 360
accacggtca ccgtctcctc a   381

<210> 90
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 90
Glu Val Gln Leu Val Gln Ser Gly Gly Ala Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Thr Ala Ser Gly Phe Thr Phe Ser Asn Tyr
            20   25   30
Asp Met His Trp Val Arg Gln Thr Thr Gly Lys Gly Leu Glu Trp Ile
        35   40   45
Ser Ala Ile Asp Thr Ala Gly Asp Thr Tyr Tyr Pro Gly Ser Val Lys
    50   55   60
Gly Arg Phe Thr Val Ser Arg Glu Asn Ala Lys Asn Ser Phe Tyr Leu
65   70   75   80
Gln Met Asn Ser Leu Arg Ala Gly Asp Thr Ala Val Tyr Tyr Cys Ala
                85   90   95
Arg Glu Gly Lys Tyr Tyr Asp Ile Leu Thr Gly Asp Tyr His Tyr Tyr

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            100                 105                 110
Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125


<210> 91
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 91
ggtttcacct tcagtaacta cgac                                          24

<210> 92
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 92
Gly Phe Thr Phe Ser Asn Tyr Asp
 1               5


<210> 93
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 93
attgatactg ctggtgacac a                                             21

<210> 94
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 94
Ile Asp Thr Ala Gly Asp Thr
 1               5


<210> 95
<211> 63
<212> DNA
<213> Artificial Sequence
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<220>
<223> Synthetic

<400> 95
gcaagggagg ggaagtatta cgatattttg actggtgact accactacta cggtatggac 60
gtc 63

<210> 96
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 96
Ala Arg Glu Gly Lys Tyr Tyr Asp Ile Leu Thr Gly Asp Tyr His Tyr
 1   5   10   15
Tyr Gly Met Asp Val
            20

<210> 97
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 97
gccatccgga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaagcgact gatctatgct acatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
gaagattttg caacttatta ctgtctacag cataatagtt acccgctcac tttcggcgga 300
gggaccaagg tggaaatcaa acga 324

<210> 98
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 98
Ala Ile Arg Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Asp
            20   25   30
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
        35   40   45
Tyr Ala Thr Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Leu

85 90 95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 99
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 99
cagggcatta gaaatgat 18

<210> 100
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 100
Gln Gly Ile Arg Asn Asp
1 5

<210> 101
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 101
gctacatcc 9

<210> 102
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 102
Ala Thr Ser
1

<210> 103
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 103
ctacagcata atagttaccc gctcact 27

<210> 104
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 104
Leu Gln His Asn Ser Tyr Pro Leu Thr
1 5

<210> 105
<211> 378
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 105
gaggtgcagc tggtggagtc tgggggagcc ttggtacagc ctgggggtc cctgagactc 60
tcctgtacag cctctggttt caccttcagt aactacgaca tgcactgggt ccgccaaact 120
acaggaaaag gtctggagtg gatctcagct attgatactg ctggtgacac atactatcca 180
ggctccgtga agggccgatt caccgtctcc agagaaaatg ccaagaactc cttttatctt 240
caaatgaaca gcctgagagc cggggacacg gctgtgtatt actgtgcaag ggaggggaag 300
tattacgata ttttgactgg tgactaccac tactacggta tggacgtctg gggccaaggg 360
accacggtca ccgtctcc 378

<210> 106
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 106
Glu Val Gln Leu Val Glu Ser Gly Gly Ala Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Thr Ala Ser Gly Phe Thr Phe Ser Asn Tyr
20 25 30
Asp Met His Trp Val Arg Gln Thr Thr Gly Lys Gly Leu Glu Trp Ile
35 40 45
Ser Ala Ile Asp Thr Ala Gly Asp Thr Tyr Tyr Pro Gly Ser Val Lys
50 55 60
Gly Arg Phe Thr Val Ser Arg Glu Asn Ala Lys Asn Ser Phe Tyr Leu
65 70 75 80
Gln Met Asn Ser Leu Arg Ala Gly Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95
Arg Glu Gly Lys Tyr Tyr Asp Ile Leu Thr Gly Asp Tyr His Tyr Tyr

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            100                 105                 110
Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser
        115                 120                 125
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<210> 107
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 107
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaagcgact gatctatgct acatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
gaagattttg caacttatta ctgtctacag cataatagtt acccgctcac tttcggcgga 300
gggaccaagc tggagatcaa a 321

<210> 108
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 108
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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 Gly Ile Arg Asn Asp
            20                  25                  30
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
        35                  40                  45
Tyr Ala Thr Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Leu
                85                  90                  95
Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100                 105
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<210> 109
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 109
caggtgcagc tggtgcagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctgggtt cacctttagt aactttggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtttg atgaaattga taaatactat 180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ccgcaaatga acagcctgag agccgaagac acggctgtgt attactgtgc gcgagaagat 300
tacgatattt tgactggtta ctattacgct atggacgtct ggggccaagg gaccacggtc 360
accgtctcct ca 372

<210> 110
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 110
Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Phe
20 25 30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Val Ile Trp Phe Asp Glu Ile Asp Lys Tyr Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80
Pro Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Glu Asp Tyr Asp Ile Leu Thr Gly Tyr Tyr Tyr Ala Met Asp
100 105 110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 111
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 111
gggttcacct ttagtaactt tggc 24

<210> 112
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 112
Gly Phe Thr Phe Ser Asn Phe Gly
1 5

<210> 113
<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 113
atatggtttg atgaaattga taaa 24

<210> 114
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 114
Ile Trp Phe Asp Glu Ile Asp Lys
1 5

<210> 115
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 115
gcgcgagaag attacgatat tttgactggt tactattacg ctatggacgt c 51

<210> 116
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 116
Ala Arg Glu Asp Tyr Asp Ile Leu Thr Gly Tyr Tyr Tyr Ala Met Asp
1 5 10 15
Val

<210> 117
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 117
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaagcgcct aatctatgct gcatcccgtt tgcaaagtgg ggtcccatcg 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
gaagattttg gaacttatta ctgtctacag cataatagtc accccacctt cggccaaggg 300
accaaggtgg agatcaaacg a 321

<210> 118
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 118
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Asp
20 25 30
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
35 40 45
Tyr Ala Ala Ser Arg Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Gly Thr Tyr Tyr Cys Leu Gln His Asn Ser His Pro Thr
85 90 95
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 119
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 119
cagggcatta gaaatgat 18

<210> 120
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 120
Gln Gly Ile Arg Asn Asp
1 5

<210> 121
<211> 9
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 121
gctgcatcc 9

<210> 122
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 122
Ala Ala Ser
1

<210> 123
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 123
ctacagcata atagtcaccc cacc 24

<210> 124
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 124
Leu Gln His Asn Ser His Pro Thr
1 5

<210> 125
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 125
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctgggtt cacctttagt aactttggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtttg atgaaattga taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240

ccgcaaatga acagcctgag agccgaagac acggctgtgt attactgtgc gcgagaagat 300
tacgatattt tgactggtta ctattacgct atggacgtct ggggccaagg gaccacggtc 360
accgtctcc 369

<210> 126
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 126
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Phe
20 25 30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Val Ile Trp Phe Asp Glu Ile Asp Lys Tyr Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80
Pro Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Glu Asp Tyr Asp Ile Leu Thr Gly Tyr Tyr Tyr Ala Met Asp
100 105 110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser
115 120

<210> 127
<211> 318
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 127
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaagcgcct aatctatgct gcatcccgtt tgcaaagtgg ggtcccatcg 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
gaagattttg gaacttatta ctgtctacag cataatagtc accccacctt cggccaaggg 300
accaaggtgg agatcaaa 318

<210> 128
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 128
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

```
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Lys Asn Asp
            20                  25                  30
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
        35                  40                  45
Tyr Ala Ala Ser Arg Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Gly Thr Tyr Tyr Cys Leu Gln His Asn Ser His Pro Thr
                85                  90                  95
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100                 105
```

<210> 129
<211> 381
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 129
gaggtgcagc tggtggagtc gggggggaggc atggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctccagt aactacgaca tgcactgggt ccgccaagct 120
acaggaaaag gtctggagtg ggtctcaagt attgatactg ctggggacac ttactatcca 180
gactccgtga agggccgctt tatcatctcc agagaaaatg ccaaaaactc cctgtatctt 240
caaatgaata gcctgagagc cggggacacg gctgtgtatt actgtacaag ggagccccga 300
aattacgaaa ttttgactgg tcactaccac taccacggta tggacatctg gggccaaggg 360
accacggtca ccgtctcctc a 381

<210> 130
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 130
```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Met Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ser Ser Asn Tyr
            20                  25                  30
Asp Met His Trp Val Arg Gln Ala Thr Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Ser Ile Asp Thr Ala Gly Asp Thr Tyr Tyr Pro Asp Ser Val Lys
    50                  55                  60
Gly Arg Phe Ile Ile Ser Arg Glu Asn Ala Lys Asn Ser Leu Tyr Leu
65                  70                  75                  80
Gln Met Asn Ser Leu Arg Ala Gly Asp Thr Ala Val Tyr Tyr Cys Thr
                85                  90                  95
Arg Glu Pro Arg Asn Tyr Glu Ile Leu Thr Gly His Tyr His Tyr His
            100                 105                 110
Gly Met Asp Ile Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120                 125
```

<210> 131
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 131
ggattcacct ccagtaacta cgac 24

<210> 132
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 132
Gly Phe Thr Ser Ser Asn Tyr Asp
1 5

<210> 133
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 133
attgatactg ctggggacac t 21

<210> 134
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 134
Ile Asp Thr Ala Gly Asp Thr
1 5

<210> 135
<211> 63
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 135
acaagggagc cccgaaatta cgaaattttg actggtcact accactacca cggtatggac 60

atc 63

<210> 136
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 136
Thr Arg Glu Pro Arg Asn Tyr Glu Ile Leu Thr Gly His Tyr His Tyr
1 5 10 15
His Gly Met Asp Ile
20

<210> 137
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 137
gacatccaga tgacccagtc gccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca ggccattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaaactcct gatctatact gcattcagtt tacagagtgg ggtcccatca 180
aggttcagcg gcagtaaatc tggcacagac ttcactctca ccatcagcag cctgcagcct 240
gaagattttg cgacttatta ctgtctgcag gattacacta atcctcggac gttcggccaa 300
gggaccaagg tggagatcaa acga 324

<210> 138
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<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 Ala Ile Arg Asn Asp
20 25 30
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr Thr Ala Phe Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Lys 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 Leu Gln Asp Tyr Thr Asn Pro Arg
85 90 95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 139
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 139
caggccatta gaaatgat 18

<210> 140
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 140
Gln Ala Ile Arg Asn Asp
1 5

<210> 141
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 141
actgcattc 9

<210> 142
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 142
Thr Ala Phe
1

<210> 143
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 143
ctgcaggatt acactaatcc tcggacg 27

<210> 144
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 144
Leu Gln Asp Tyr Thr Asn Pro Arg Thr
 1   5

<210> 145
<211> 378
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 145
gaggtgcagc tggtggagtc gggggggaggc atggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctccagt aactacgaca tgcactgggt ccgccaagct 120
acaggaaaag gtctggagtg ggtctcaagt attgatactg ctggggacac ttactatcca 180
gactccgtga agggccgctt tatcatctcc agagaaaatg ccaaaaactc cctgtatctt 240
caaatgaata gcctgagagc cggggacacg gctgtgtatt actgtacaag ggagccccga 300
aattacgaaa ttttgactgg tcactaccac taccacggta tggacatctg gggccaaggg 360
accacggtca ccgtctcc   378

<210> 146
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 146
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Met Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Ser Ser Asn Tyr
            20   25   30
Asp Met His Trp Val Arg Gln Ala Thr Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Ser Ile Asp Thr Ala Gly Asp Thr Tyr Tyr Pro Asp Ser Val Lys
    50   55   60
Gly Arg Phe Ile Ile Ser Arg Glu Asn Ala Lys Asn Ser Leu Tyr Leu
65   70   75   80
Gln Met Asn Ser Leu Arg Ala Gly Asp Thr Ala Val Tyr Tyr Cys Thr
                85   90   95
Arg Glu Pro Arg Asn Tyr Glu Ile Leu Thr Gly His Tyr His Tyr His
            100   105   110
Gly Met Asp Ile Trp Gly Gln Gly Thr Thr Val Thr Val Ser
        115   120   125

<210> 147
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 147
gccatccaga tgacccagtc gccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca ggccattaga aatgatttag gctggtatca gcagaaacca 120
gggaaagccc ctaaactcct gatctatact gcattcagtt tacagagtgg ggtcccatca 180
aggttcagcg gcagtaaatc tggcacagac ttcactctca ccatcagcag cctgcagcct 240
gaagattttg cgacttatta ctgtctgcag gattacacta atcctcggac gttcggccaa 300
gggaccaagg tggaaatcaa a 321

<210> 148
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 148
Ala 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 Ala Ile Arg Asn Asp
            20   25   30
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Thr Ala Phe Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Lys 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 Leu Gln Asp Tyr Thr Asn Pro Arg
                85   90   95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 149
<211> 345
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 149
Gln Val Met Asp Phe Leu Phe Glu Lys Trp Lys Leu Tyr Gly Asp Gln
 1   5   10   15
Cys His His Asn Leu Ser Leu Leu Pro Pro Pro Thr Glu Leu Val Cys
            20   25   30
Asn Arg Thr Phe Asp Lys Tyr Ser Cys Trp Pro Asp Thr Pro Ala Asn
        35   40   45
Thr Thr Ala Asn Ile Ser Cys Pro Trp Tyr Leu Pro Trp His His Lys
    50   55   60

```
Val Gln His Arg Phe Val Phe Lys Arg Cys Gly Pro Asp Gly Gln Trp
65                  70                  75                  80
Val Arg Gly Pro Arg Gly Gln Pro Trp Arg Asp Ala Ser Gln Cys Gln
                85                  90                  95
Met Asp Gly Glu Glu Ile Glu Val Gln Lys Glu Val Ala Lys Met Tyr
            100                 105                 110
Ser Ser Phe Gln Val Met Asp Lys Thr His Thr Cys Pro Pro Cys Pro
        115                 120                 125
Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
    130                 135                 140
Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
145                 150                 155                 160
Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
                165                 170                 175
Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
            180                 185                 190
Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
        195                 200                 205
Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
    210                 215                 220
Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
225                 230                 235                 240
Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
                245                 250                 255
Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
            260                 265                 270
Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
        275                 280                 285
Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
    290                 295                 300
Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
305                 310                 315                 320
Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
                325                 330                 335
Lys Ser Leu Ser Leu Ser Pro Gly Lys
            340                 345
```

<210> 150
<211> 348
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

```
<400> 150
Gln Val Met Asp Phe Leu Phe Glu Lys Trp Lys Leu Tyr Gly Asp Gln
 1                  5                  10                  15
Cys His His Asn Leu Ser Leu Leu Pro Pro Pro Thr Glu Leu Val Cys
            20                  25                  30
Asn Arg Thr Phe Asp Lys Tyr Ser Cys Trp Pro Asp Thr Pro Ala Asn
        35                  40                  45
Thr Thr Ala Asn Ile Ser Cys Pro Trp Tyr Leu Pro Trp His His Lys
    50                  55                  60
Val Gln His Arg Phe Val Phe Lys Arg Cys Gly Pro Asp Gly Gln Trp
65                  70                  75                  80
Val Arg Gly Pro Arg Gly Gln Pro Trp Arg Asp Ala Ser Gln Cys Gln
```

```
                85                  90                  95
Met Asp Gly Glu Glu Ile Glu Val Gln Lys Glu Val Ala Lys Met Tyr
            100                 105                 110
Ser Ser Phe Gln Val Met Gly Pro Gly Asp Lys Thr His Thr Cys Pro
        115                 120                 125
Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe
    130                 135                 140
Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
145                 150                 155                 160
Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
                165                 170                 175
Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
            180                 185                 190
Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr
        195                 200                 205
Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
    210                 215                 220
Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala
225                 230                 235                 240
Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
                245                 250                 255
Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
            260                 265                 270
Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
        275                 280                 285
Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser
    290                 295                 300
Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
305                 310                 315                 320
Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
                325                 330                 335
Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
            340                 345
```

<210> 151
<211> 146
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 151

```
Gln Val Met Asp Phe Leu Phe Glu Lys Trp Lys Leu Tyr Gly Asp Gln
 1               5                  10                  15
Cys His His Asn Leu Ser Leu Leu Pro Pro Pro Thr Glu Leu Val Cys
            20                  25                  30
Asn Arg Thr Phe Asp Lys Tyr Ser Cys Trp Pro Asp Thr Pro Ala Asn
        35                  40                  45
Thr Thr Ala Asn Ile Ser Cys Pro Trp Tyr Leu Pro Trp His His Lys
    50                  55                  60
Val Gln His Arg Phe Val Phe Lys Arg Cys Gly Pro Asp Gly Gln Trp
65                  70                  75                  80
Val Arg Gly Pro Arg Gly Gln Pro Trp Arg Asp Ala Ser Gln Cys Gln
                85                  90                  95
Met Asp Gly Glu Glu Ile Glu Val Gln Lys Glu Val Ala Lys Met Tyr
            100                 105                 110
```

```
Ser Ser Phe Gln Val Met Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
        115                 120                 125
Gly Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu His His His His
    130                 135                 140
His His
145
```

<210> 152
<211> 351
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 152

```
Gly Ala Pro Gln Val Met Asp Phe Leu Phe Glu Lys Trp Lys Leu Tyr
 1               5                  10                  15
Gly Asp Gln Cys His His Asn Leu Ser Leu Leu Pro Pro Pro Thr Glu
            20                  25                  30
Leu Val Cys Asn Arg Thr Phe Asp Lys Tyr Ser Cys Trp Pro Asp Thr
        35                  40                  45
Pro Ala Asn Thr Thr Ala Asn Ile Ser Cys Pro Trp Tyr Leu Pro Trp
    50                  55                  60
His His Lys Val Gln His Arg Phe Val Phe Lys Arg Cys Gly Pro Asp
65                  70                  75                  80
Gly Gln Trp Val Arg Gly Pro Arg Gly Gln Pro Trp Arg Asp Ala Ser
                85                  90                  95
Gln Cys Gln Met Asp Gly Glu Glu Leu Glu Val Gln Lys Glu Val Ala
            100                 105                 110
Lys Met Tyr Ser Ser Phe Gln Val Met Gly Pro Gly Asp Lys Thr His
        115                 120                 125
Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
    130                 135                 140
Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
145                 150                 155                 160
Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
                165                 170                 175
Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
            180                 185                 190
Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser
        195                 200                 205
Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
    210                 215                 220
Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile
225                 230                 235                 240
Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
                245                 250                 255
Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu
            260                 265                 270
Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
        275                 280                 285
Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
    290                 295                 300
Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
305                 310                 315                 320
Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
```

```
                325                 330                 335
His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
            340                 345                 350


<210> 153
<211> 477
<212> PRT
<213> Homo sapiens

<400> 153
Met Pro Pro Cys Gln Pro Gln Arg Pro Leu Leu Leu Leu Leu Leu Leu
 1               5                  10                  15
Leu Ala Cys Gln Pro Gln Val Pro Ser Ala Gln Val Met Asp Phe Leu
            20                  25                  30
Phe Glu Lys Trp Lys Leu Tyr Gly Asp Gln Cys His His Asn Leu Ser
        35                  40                  45
Leu Leu Pro Pro Pro Thr Glu Leu Val Cys Asn Arg Thr Phe Asp Lys
    50                  55                  60
Tyr Ser Cys Trp Pro Asp Thr Pro Ala Asn Thr Thr Ala Asn Ile Ser
65                  70                  75                  80
Cys Pro Trp Tyr Leu Pro Trp His His Lys Val Gln His Arg Phe Val
                85                  90                  95
Phe Lys Arg Cys Gly Pro Asp Gly Gln Trp Val Arg Gly Pro Arg Gly
            100                 105                 110
Gln Pro Trp Arg Asp Ala Ser Gln Cys Gln Met Asp Gly Glu Glu Ile
        115                 120                 125
Glu Val Gln Lys Glu Val Ala Lys Met Tyr Ser Ser Phe Gln Val Met
    130                 135                 140
Tyr Thr Val Gly Tyr Ser Leu Ser Leu Gly Ala Leu Leu Leu Ala Leu
145                 150                 155                 160
Ala Ile Leu Gly Gly Leu Ser Lys Leu His Cys Thr Arg Asn Ala Ile
                165                 170                 175
His Ala Asn Leu Phe Ala Ser Phe Val Leu Lys Ala Ser Ser Val Leu
            180                 185                 190
Val Ile Asp Gly Leu Leu Arg Thr Arg Tyr Ser Gln Lys Ile Gly Asp
        195                 200                 205
Asp Leu Ser Val Ser Thr Trp Leu Ser Asp Gly Ala Val Ala Gly Cys
    210                 215                 220
Arg Val Ala Ala Val Phe Met Gln Tyr Gly Ile Val Ala Asn Tyr Cys
225                 230                 235                 240
Trp Leu Leu Val Glu Gly Leu Tyr Leu His Asn Leu Leu Gly Leu Ala
                245                 250                 255
Thr Leu Pro Glu Arg Ser Phe Phe Ser Leu Tyr Leu Gly Ile Gly Trp
            260                 265                 270
Gly Ala Pro Met Leu Phe Val Val Pro Trp Ala Val Val Lys Cys Leu
        275                 280                 285
Phe Glu Asn Val Gln Cys Trp Thr Ser Asn Asp Asn Met Gly Phe Trp
    290                 295                 300
Trp Ile Leu Arg Phe Pro Val Phe Leu Ala Ile Leu Ile Asn Phe Phe
305                 310                 315                 320
Ile Phe Val Arg Ile Val Gln Leu Leu Val Ala Lys Leu Arg Ala Arg
                325                 330                 335
Gln Met His His Thr Asp Tyr Lys Phe Arg Leu Ala Lys Ser Thr Leu
            340                 345                 350
Thr Leu Ile Pro Leu Leu Gly Val His Glu Val Val Phe Ala Phe Val
        355                 360                 365
Thr Asp Glu His Ala Gln Gly Thr Leu Arg Ser Ala Lys Leu Phe Phe
```

```
    370                 375                 380
Asp Leu Phe Leu Ser Ser Phe Gln Gly Leu Leu Val Ala Val Leu Tyr
385                 390                 395                 400
Cys Phe Leu Asn Lys Glu Val Gln Ser Glu Leu Arg Arg Arg Trp His
                405                 410                 415
Arg Trp Arg Leu Gly Lys Val Leu Trp Glu Glu Arg Asn Thr Ser Asn
            420                 425                 430
His Arg Ala Ser Ser Ser Pro Gly His Gly Pro Pro Ser Lys Glu Leu
        435                 440                 445
Gln Phe Gly Arg Gly Gly Gly Ser Gln Asp Ser Ser Ala Glu Thr Pro
    450                 455                 460
Leu Ala Gly Gly Leu Pro Arg Leu Ala Glu Ser Pro Phe
465                 470                 475
```

<210> 154
<211> 485
<212> PRT
<213> Mus musculus

<400> 154

```
Met Ala Leu Thr Gln Leu His Cys Pro His Leu Leu Leu Leu Leu Leu
 1               5                  10                  15
Val Leu Ser Cys Leu Pro Glu Ala Pro Ser Ala Gln Val Met Asp Phe
            20                  25                  30
Leu Phe Glu Lys Trp Lys Leu Tyr Ser Asp Gln Cys His His Asn Leu
        35                  40                  45
Ser Leu Leu Pro Pro Pro Thr Glu Leu Val Cys Asn Arg Thr Phe Asp
    50                  55                  60
Lys Tyr Ser Cys Trp Pro Asp Thr Pro Pro Asn Thr Thr Ala Asn Ile
65                  70                  75                  80
Ser Cys Pro Trp Tyr Leu Pro Trp Tyr His Lys Val Gln His Arg Leu
                85                  90                  95
Val Phe Lys Arg Cys Gly Pro Asp Gly Gln Trp Val Arg Gly Pro Arg
            100                 105                 110
Gly Gln Pro Trp Arg Asn Ala Ser Gln Cys Gln Leu Asp Asp Glu Glu
        115                 120                 125
Ile Glu Val Gln Lys Gly Val Ala Lys Met Tyr Ser Ser Gln Gln Val
    130                 135                 140
Met Tyr Thr Val Gly Tyr Ser Leu Ser Leu Gly Ala Leu Leu Leu Ala
145                 150                 155                 160
Leu Val Ile Leu Leu Gly Leu Arg Lys Leu His Cys Thr Arg Asn Tyr
                165                 170                 175
Ile His Gly Asn Leu Phe Ala Ser Phe Val Leu Lys Ala Gly Ser Val
            180                 185                 190
Leu Val Ile Asp Trp Leu Leu Lys Thr Arg Tyr Ser Gln Lys Ile Gly
        195                 200                 205
Asp Asp Leu Ser Val Ser Val Trp Leu Ser Asp Gly Ala Met Ala Gly
    210                 215                 220
Cys Arg Val Ala Thr Val Ile Met Gln Tyr Gly Ile Ile Ala Asn Tyr
225                 230                 235                 240
Cys Trp Leu Leu Val Glu Gly Val Tyr Leu Tyr Ser Leu Leu Ser Leu
                245                 250                 255
Ala Thr Phe Ser Glu Arg Ser Phe Phe Ser Leu Tyr Leu Gly Ile Gly
            260                 265                 270
Trp Gly Ala Pro Leu Leu Phe Val Ile Pro Trp Val Val Val Lys Cys
        275                 280                 285
Leu Phe Glu Asn Val Gln Cys Trp Thr Ser Asn Asp Asn Met Gly Phe
```

```
    290                 295                 300
Trp Trp Ile Leu Arg Ile Pro Val Phe Leu Ala Leu Leu Ile Asn Phe
305                 310                 315                 320
Phe Ile Phe Val His Ile Ile His Leu Leu Val Ala Lys Leu Arg Ala
                325                 330                 335
His Gln Met His Tyr Ala Asp Tyr Lys Phe Arg Leu Ala Arg Ser Thr
            340                 345                 350
Leu Thr Leu Ile Pro Leu Leu Gly Val His Glu Val Val Phe Ala Phe
        355                 360                 365
Val Thr Asp Glu His Ala Gln Gly Thr Leu Arg Ser Thr Lys Leu Phe
    370                 375                 380
Phe Asp Leu Phe Leu Ser Ser Phe Gln Gly Leu Leu Val Ala Val Leu
385                 390                 395                 400
Tyr Cys Phe Leu Asn Lys Glu Val Gln Ala Glu Leu Met Arg Arg Trp
                405                 410                 415
Arg Gln Trp Gln Glu Gly Lys Ala Leu Gln Glu Glu Arg Leu Ala Ser
            420                 425                 430
Ser His Gly Ser His Met Ala Pro Ala Gly Pro Cys His Gly Asp Pro
        435                 440                 445
Cys Glu Lys Leu Gln Leu Met Ser Ala Gly Ser Ser Ser Gly Thr Gly
    450                 455                 460
Cys Val Pro Ser Met Glu Thr Ser Leu Ala Ser Ser Leu Pro Arg Leu
465                 470                 475                 480
Ala Asp Ser Pro Thr
                485
```

<210> 155
<211> 491
<212> PRT
<213> Macaca fascicularis

<400> 155

```
Met Ala Pro Cys Gln Pro Arg Arg Pro Leu Leu Leu Leu Leu Leu Leu
 1               5                  10                  15
Leu Ala Cys Gln Pro Gln Ala Pro Ser Ala Gln Val Met Asp Phe Leu
            20                  25                  30
Phe Glu Lys Trp Lys Leu Tyr Gly Asp Gln Cys His His Asn Leu Ser
        35                  40                  45
Leu Leu Pro Pro Pro Thr Glu Leu Val Cys Asn Arg Thr Phe Asp Lys
    50                  55                  60
Tyr Ser Cys Trp Pro Asp Thr Pro Ala Asn Thr Thr Ala Asn Ile Ser
65                  70                  75                  80
Cys Pro Trp Tyr Leu Pro Trp His His Lys Val Gln His Arg Phe Val
                85                  90                  95
Phe Lys Arg Cys Gly Pro Asp Gly Gln Trp Val Arg Gly Pro Arg Gly
            100                 105                 110
Gln Pro Trp Arg Asp Ala Ser Gln Cys Gln Met Asp Gly Glu Glu Leu
        115                 120                 125
Glu Val Gln Lys Glu Val Ala Lys Met Tyr Ser Ser Phe Gln Val Met
    130                 135                 140
Tyr Thr Val Gly Tyr Ser Leu Ser Leu Gly Ala Leu Leu Leu Ala Leu
145                 150                 155                 160
Ala Ile Leu Gly Gly Ile Ser Lys Leu His Cys Thr Arg Asn Ala Ile
                165                 170                 175
His Ala Asn Leu Phe Val Ser Phe Val Leu Lys Ala Ser Ser Val Leu
            180                 185                 190
Val Ile Asp Gly Leu Leu Arg Thr Arg Tyr Ser Gln Lys Ile Gly Asp
```

```
        195                 200                 205
Asp Leu Ser Val Ser Ile Trp Leu Ser Asp Gly Ala Val Ala Gly Cys
    210                 215                 220
Arg Val Ala Ala Val Phe Met Gln Tyr Gly Val Val Ala Asn Tyr Cys
225                 230                 235                 240
Trp Leu Leu Val Glu Gly Leu Tyr Leu His Asn Leu Leu Gly Leu Ala
                245                 250                 255
Thr Leu Pro Glu Arg Ser Phe Phe Ser Leu Tyr Leu Gly Ile Gly Trp
            260                 265                 270
Gly Ala Pro Met Leu Phe Ile Ile Pro Trp Val Val Val Arg Cys Leu
        275                 280                 285
Phe Glu Asn Ile Gln Cys Trp Thr Ser Asn Asp Asn Met Gly Phe Trp
    290                 295                 300
Trp Ile Leu Arg Phe Pro Val Phe Leu Ala Ile Leu Ile Asn Phe Phe
305                 310                 315                 320
Ile Phe Ile Arg Ile Val His Leu Leu Val Ala Lys Leu Arg Ala Arg
                325                 330                 335
Glu Met His His Thr Asp Tyr Lys Phe Arg Leu Ala Lys Ser Thr Leu
            340                 345                 350
Thr Leu Ile Pro Leu Leu Gly Val His Glu Val Val Phe Ala Phe Val
        355                 360                 365
Thr Asp Glu His Ala Gln Gly Thr Leu Arg Phe Ala Lys Leu Phe Phe
    370                 375                 380
Asp Leu Phe Leu Ser Ser Phe Gln Gly Leu Leu Val Ala Val Leu Tyr
385                 390                 395                 400
Cys Phe Leu Asn Lys Glu Val Gln Ser Glu Leu Arg Arg His Trp His
                405                 410                 415
Arg Trp Arg Leu Gly Lys Val Leu Gln Glu Glu Arg Gly Thr Ser Asn
            420                 425                 430
His Lys Ala Pro Ser Ala Pro Gly Gln Gly Leu Pro Gly Lys Lys Leu
        435                 440                 445
Gln Ser Gly Arg Asp Gly Gly Ser Gln Asp Ser Ser Ala Glu Ile Pro
    450                 455                 460
Leu Ala Gly Gly Leu Pro Arg Leu Ala Glu Ser Pro Phe Ser Thr Leu
465                 470                 475                 480
Leu Gly Pro Gln Leu Gly Leu Asp Ser Gly Thr
                485                 490
```

<210> 156
<211> 485
<212> PRT
<213> Rattus norvegicus

<400> 156

```
Met Val Leu Thr Gln Leu His Cys Pro Tyr Leu Leu Leu Leu Leu Val
 1               5                  10                  15
Val Leu Ser Cys Leu Pro Lys Ala Pro Ser Ala Gln Val Met Asp Phe
            20                  25                  30
Leu Phe Glu Lys Trp Lys Leu Tyr Ser Asp Gln Cys His His Asn Leu
        35                  40                  45
Ser Leu Leu Pro Pro Pro Thr Glu Leu Val Cys Asn Arg Thr Phe Asp
    50                  55                  60
Lys Tyr Ser Cys Trp Pro Asp Thr Pro Pro Asn Thr Thr Ala Asn Ile
65                  70                  75                  80
Ser Cys Pro Trp Tyr Leu Pro Trp Tyr His Lys Val Gln His Arg Leu
                85                  90                  95
Val Phe Lys Arg Cys Gly Pro Asp Gly Gln Trp Val Arg Gly Pro Arg
```

```
            100                 105                 110
Gly Gln Ser Trp Arg Asp Ala Ser Gln Cys Gln Met Asp Asp Asp Glu
        115                 120                 125
Ile Glu Val Gln Lys Gly Val Ala Lys Met Tyr Ser Ser Tyr Gln Val
    130                 135                 140
Met Tyr Thr Val Gly Tyr Ser Leu Ser Leu Gly Ala Leu Leu Leu Ala
145                 150                 155                 160
Leu Val Ile Leu Leu Gly Leu Arg Lys Leu His Cys Thr Arg Asn Tyr
                165                 170                 175
Ile His Gly Asn Leu Phe Ala Ser Phe Val Leu Lys Ala Gly Ser Val
            180                 185                 190
Leu Val Ile Asp Trp Leu Leu Lys Thr Arg Tyr Ser Gln Lys Ile Gly
        195                 200                 205
Asp Asp Leu Ser Val Ser Val Trp Leu Ser Asp Gly Ala Val Ala Gly
    210                 215                 220
Cys Arg Val Ala Thr Val Ile Met Gln Tyr Gly Ile Ile Ala Asn Tyr
225                 230                 235                 240
Cys Trp Leu Leu Val Glu Gly Val Tyr Leu Tyr Ser Leu Leu Ser Ile
                245                 250                 255
Thr Thr Phe Ser Glu Lys Ser Phe Phe Ser Leu Tyr Leu Cys Ile Gly
            260                 265                 270
Trp Gly Ser Pro Leu Leu Phe Val Ile Pro Trp Val Val Val Lys Cys
        275                 280                 285
Leu Phe Glu Asn Val Gln Cys Trp Thr Ser Asn Asp Asn Met Gly Phe
    290                 295                 300
Trp Trp Ile Leu Arg Ile Pro Val Leu Leu Ala Ile Leu Ile Asn Phe
305                 310                 315                 320
Phe Ile Phe Val Arg Ile Ile His Leu Leu Val Ala Lys Leu Arg Ala
                325                 330                 335
His Gln Met His Tyr Ala Asp Tyr Lys Phe Arg Leu Ala Arg Ser Thr
            340                 345                 350
Leu Thr Leu Ile Pro Leu Leu Gly Val His Glu Val Val Phe Ala Phe
        355                 360                 365
Val Thr Asp Glu His Ala Gln Gly Thr Leu Arg Ser Thr Lys Leu Phe
    370                 375                 380
Phe Asp Leu Phe Phe Ser Ser Phe Gln Gly Leu Leu Val Ala Val Leu
385                 390                 395                 400
Tyr Cys Phe Leu Asn Lys Glu Val Gln Ala Glu Leu Leu Arg Arg Trp
                405                 410                 415
Arg Arg Trp Gln Glu Gly Lys Ala Leu Gln Glu Glu Arg Met Ala Ser
            420                 425                 430
Ser His Gly Ser His Met Ala Pro Ala Gly Thr Cys His Gly Asp Pro
        435                 440                 445
Cys Glu Lys Leu Gln Leu Met Ser Ala Gly Ser Ser Ser Gly Thr Gly
    450                 455                 460
Cys Glu Pro Ser Ala Lys Thr Ser Leu Ala Ser Ser Leu Pro Arg Leu
465                 470                 475                 480
Ala Asp Ser Pro Thr
                485
```

<210> 157
<211> 1434
<212> DNA
<213> Homo sapiens

<400> 157
atgcccccct gccagccaca gcgacccctg ctgctgttgc tgctgctgct ggcctgccag 60

ccacaggtcc cctccgctca ggtgatggac ttcctgtttg agaagtggaa gctctacggt 120
gaccagtgtc accacaacct gagcctgctg ccccctccca cggagctggt gtgcaacaga 180
accttcgaca agtattcctg ctggccggac acccccgcca ataccacggc caacatctcc 240
tgcccctggt acctgccttg gcaccacaaa gtgcaacacc gcttcgtgtt caagagatgc 300
gggcccgacg gtcagtgggt gcgtggaccc cgggggcagc cttggcgtga tgcctcccag 360
tgccagatgg atggcgagga gattgaggtc cagaaggagg tggccaagat gtacagcagc 420
ttccaggtga tgtacacagt gggctacagc ctgtccctgg gggccctgct cctcgccttg 480
gccatcctgg ggggcctcag caagctgcac tgcacccgca atgccatcca cgcgaatctg 540
tttgcgtcct tcgtgctgaa agccagctcc gtgctggtca ttgatgggct gctcaggacc 600
cgctacagcc agaaaattgg cgacgacctc agtgtcagca cctggctcag tgatggagcg 660
gtggctggct gccgtgtggc cgcggtgttc atgcaatatg gcatcgtggc caactactgc 720
tggctgctgg tggagggcct gtacctgcac aacctgctgg gcctggccac cctccccgag 780
aggagcttct tcagcctcta cctgggcatc ggctggggtg cccccatgct gttcgtcgtc 840
ccctgggcag tggtcaagtg tctgttcgag aacgtccagt gctggaccag caatgacaac 900
atgggcttct ggtggatcct gcggttcccc gtcttcctgg ccatcctgat caacttcttc 960
atcttcgtcc gcatcgttca gctgctcgtg gccaagctgc gggcacggca gatgcaccac
1020
acagactaca agttccggct ggccaagtcc acgctgaccc tcatccctct gctgggcgtc
1080
cacgaagtgg tctttgcctt cgtgacggac gagcacgccc agggcaccct gcgctccgcc
1140
aagctcttct tcgacctctt cctcagctcc ttccagggcc tgctggtggc tgtcctctac
1200
tgcttcctca acaaggaggt gcagtcggag ctgcggcggc gttggcaccg ctggcgcctg
1260
ggcaaagtgc tatgggagga gcggaacacc agcaaccaca gggcctcatc ttcgcccggc
1320
cacggccctc ccagcaagga gctgcagttt gggaggggtg gtggcagcca ggattcatct
1380
gcggagaccc ccttggctgg tggcctccct agattggctg agagcccctt ctga
1434

<210> 158
<211> 354
<212> DNA
<213> Homo sapiens

<400> 158
caggtgatgg acttcctgtt tgagaagtgg aagctctacg gtgaccagtg tcaccacaac 60
ctgagcctgc tgcccccctcc cacggagctg gtgtgcaaca gaaccttcga caagtattcc 120
tgctggccgg acacccccgc caataccacg gccaacatct cctgcccctg gtacctgcct 180
tggcaccaca aagtgcaaca ccgcttcgtg ttcaagagat gcgggcccga cggtcagtgg 240
gtgcgtggac cccgggggca gccttggcgt gatgcctccc agtgccagat ggatggcgag 300
gagattgagg tccagaagga ggtggccaag atgtacagca gcttccaggt gatg 354

<210> 159
<211> 118
<212> PRT
<213> Homo sapiens

<400> 159
Gln Val Met Asp Phe Leu Phe Glu Lys Trp Lys Leu Tyr Gly Asp Gln
 1   5   10   15
Cys His His Asn Leu Ser Leu Leu Pro Pro Pro Thr Glu Leu Val Cys
            20   25   30
Asn Arg Thr Phe Asp Lys Tyr Ser Cys Trp Pro Asp Thr Pro Ala Asn
        35   40   45
Thr Thr Ala Asn Ile Ser Cys Pro Trp Tyr Leu Pro Trp His His Lys

```
    50                  55                  60
Val Gln His Arg Phe Val Phe Lys Arg Cys Gly Pro Asp Gly Gln Trp
65                  70                  75                  80
Val Arg Gly Pro Arg Gly Gln Pro Trp Arg Asp Ala Ser Gln Cys Gln
                85                  90                  95
Met Asp Gly Glu Glu Ile Glu Val Gln Lys Glu Val Ala Lys Met Tyr
            100                 105                 110
Ser Ser Phe Gln Val Met
        115
```

<210> 160
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 160
ggattcacct ttaacaacta tgcc 24

<210> 161
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 161
```
Gly Phe Thr Phe Asn Asn Tyr Ala
 1               5
```

<210> 162
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 162
attagtggta gcggtggtac taca 24

<210> 163
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 163
```
Ile Ser Gly Ser Gly Gly Thr Thr
 1               5
```

<210> 164
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 164
gcgaaagatt ctaactgggg aaatttcgat ctc 33

<210> 165
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 165
Ala Lys Asp Ser Asn Trp Gly Asn Phe Asp Leu
1 5 10

<210> 166
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 166
cagagtgttt tatacaggtc caacaatagg aacttc 36

<210> 167
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 167
Gln Ser Val Leu Tyr Arg Ser Asn Asn Arg Asn Phe
1 5 10

<210> 168
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 168

tgggcatct 9

<210> 169
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 169
Trp Ala Ser
1

<210> 170
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 170
caacaatatt atactactcc gtacact 27

<210> 171
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 171
Gln Gln Tyr Tyr Thr Thr Pro Tyr Thr
1 5

<210> 172
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 172
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttaac aactatgcca tgaactgggt ccgccaggct 120
ccaggaaagg gactggactg ggtctcaact attagtggta gcggtggtac tacaaactac 180
gcagactccg tgaagggccg tttcattatt tcccgagaca gttccaaaca cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaagattct 300
aactggggaa atttcgatct ctggggccgt ggcaccctgg tcactgtctc ctca 354

<210> 173
<211> 118
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 173
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Asn Tyr
            20   25   30
Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Asp Trp Val
        35   40   45
Ser Thr Ile Ser Gly Ser Gly Gly Thr Thr Asn Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Ile Ile Ser Arg Asp Ser Ser Lys His Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Lys Asp Ser Asn Trp Gly Asn Phe Asp Leu Trp Gly Arg Gly Thr
            100   105   110
Leu Val Thr Val Ser Ser
        115

<210> 174
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 174
gacatcgtga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60
atcaactgca agtccagcca gagtgtttta tacaggtcca acaataggaa cttcttaggt 120
tggtaccagc agaaaccagg gcagcctcct aatctactca tttactgggc atctacccgg 180
gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240
atcagcagcc tgcaggctga agatgtggca gtttattact gtcaacaata ttatactact 300
ccgtacactt ttggccaggg gaccaagctg gagatcaaa   339

<210> 175
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 175
Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
 1   5   10   15
Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Arg
            20   25   30
Ser Asn Asn Arg Asn Phe Leu Gly Trp Tyr Gln Gln Lys Pro Gly Gln
        35   40   45
Pro Pro Asn Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50   55   60
Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr

65 70 75 80
Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
85 90 95
Tyr Tyr Thr Thr Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile
100 105 110
Lys

<210> 176
<211> 381
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 176
gagatgcaac tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagt agtcactgga tgaagtgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtggccaac ataaaccaag atggaagtga gaaatactat 180
gtggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgttt 240
ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagatatt 300
gtactaatgg tctatgatat ggactactac tactacggta tggacgtctg gggccaaggg 360
accacggtca ccgtctcctc a 381

<210> 177
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 177
Glu Met Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser His
20 25 30
Trp Met Lys Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Asn Ile Asn Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asp Ile Val Leu Met Val Tyr Asp Met Asp Tyr Tyr Tyr Tyr
100 105 110
Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120 125

<210> 178
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 178
ggattcacct ttagtagtca ctgg 24

<210> 179
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 179
Gly Phe Thr Phe Ser Ser His Trp
1 5

<210> 180
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 180
ataaaccaag atggaagtga gaaa 24

<210> 181
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 181
Ile Asn Gln Asp Gly Ser Glu Lys
1 5

<210> 182
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 182
gcgagagata ttgtactaat ggtctatgat atggactact actactacgg tatggacgtc 60

<210> 183
<211> 20
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 183
Ala Arg Asp Ile Val Leu Met Val Tyr Asp Met Asp Tyr Tyr Tyr Tyr
 1   5   10   15
Gly Met Asp Val
            20

<210> 184
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 184
gatattgtga tgactcagtc tccactctcc ctgcccgtca cccctggaga gccggcctcc 60
atctcctgca ggtctagtca gagcctcctg catagtaatg gaaacaacta tttggattgg 120
tacctgcaga agccagggca gtctccacag ctcctgatct atttgggttc taatcgggcc 180
tccggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttac actgaaaatc 240
agcagagtgg aggctgagga tgttggggtt tattactgca tgcaaactct acaaactccg 300
ctcactttcg gcggagggac caaggtggag atcaaa   336

<210> 185
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 185
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 Asn 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 Ser Gly Thr Asp Phe Thr Leu Lys Ile
65   70   75   80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Thr
                85   90   95
Leu Gln Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105   110

<210> 186
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 186
cagagcctcc tgcatagtaa tggaaacaac tat 33

<210> 187
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 187
Gln Ser Leu Leu His Ser Asn Gly Asn Asn Tyr
1 5 10

<210> 188
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 188
ttgggttct 9

<210> 189
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 189
Leu Gly Ser
1

<210> 190
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 190
atgcaaactc tacaaactcc gctcact 27

<210> 191
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 191
Met Gln Thr Leu Gln Thr Pro Leu Thr
1 5

<210> 192
<211> 2076
<212> DNA
<213> Homo sapiens

<400> 192
atgggcaccg tcagctccag gcggtcctgg tggccgctgc cactgctgct gctgctgctg 60
ctgctcctgg gtcccgcggg cgcccgtgcg caggaggacg aggacggcga ctacgaggag 120
ctggtgctag ccttgcgttc cgaggaggac ggcctggccg aagcacccga gcacggaacc 180
acagccacct tccaccgctg cgccaaggat ccgtggaggt tgcctggcac ctacgtggtg 240
gtgctgaagg aggagaccca cctctcgcag tcagagcgca ctgcccgccg cctgcaggcc 300
caggctgccc gccggggata cctcaccaag atcctgcatg tcttccatgg ccttcttcct 360
ggcttcctgg tgaagatgag tggcgacctg ctggagctgg ccttgaagtt gccccatgtc 420
gactacatcg aggaggactc ctctgtcttt gcccagagca tcccgtggaa cctggagcgg 480
attacccctc cacggtaccg ggcggatgaa taccagcccc ccgacggagg cagcctggtg 540
gaggtgtatc tcctagacac cagcatacag agtgaccacc gggaaatcga gggcagggtc 600
atggtcaccg acttcgagaa tgtgcccgag gaggacggga cccgcttcca cagacaggcc 660
agcaagtgtg acagtcatgg cacccacctg gcaggggtgg tcagcggccg ggatgccggc 720
gtggccaagg gtgccagcat gcgcagcctg cgcgtgctca actgccaagg gaagggcacg 780
gttagcggca ccctcatagg cctggagttt attcggaaaa gccagctggt ccagcctgtg 840
gggccactgg tggtgctgct gcccctggcg ggtgggtaca gccgcgtcct caacgccgcc 900
tgccagcgcc tggcgaggge tggggtcgtg ctggtcaccg ctgccggcaa cttccgggac 960
gatgcctgcc tctactcccc agcctcagct cccgaggtca tcacagttgg ggccaccaat
1020
gcccaggacc agccggtgac cctggggact ttggggacca actttggccg ctgtgtggac
1080
ctctttgccc caggggagga catcattggt gcctccagcg actgcagcac ctgctttgtg
1140
tcacagagtg ggacatcaca ggctgctgcc cacgtggctg gcattgcagc catgatgctg
1200
tctgccgagc cggagctcac cctggccgag ttgaggcaga gactgatcca cttctctgcc
1260
aaagatgtca tcaatgaggc ctggttccct gaggaccagc gggtactgac ccccaacctg
1320
gtggccgccc tgcccccccag cacccatggg gcaggttggc agctgttttg caggactgtg
1380
tggtcagcac actcggggcc tacacggatg gccacagcca tcgcccgctg cgccccagat
1440
gaggagctgc tgagctgctc cagtttctcc aggagtggga agcggcgggg cgagcgcatg
1500
gaggcccaag ggggcaagct ggtctgccgg gcccacaacg cttttggggg tgagggtgtc
1560
tacgccattg ccaggtgctg cctgctaccc caggccaact gcagcgtcca cacagctcca
1620
ccagctgagg ccagcatggg gacccgtgtc cactgccacc aacagggcca cgtcctcaca
1680
ggctgcagct cccactggga ggtggaggac cttggcaccc acaagccgcc tgtgctgagg
1740

ccacgaggtc agcccaacca gtgcgtgggc cacagggagg ccagcatcca cgcttcctgc
1800
tgccatgccc caggtctgga atgcaaagtc aaggagcatg gaatcccggc ccctcaggag
1860
caggtgaccg tggcctgcga ggagggctgg accctgactg gctgcagtgc cctccctggg
1920
acctcccacg tcctgggggc ctacgccgta gacaacacgt gtgtagtcag gagccgggac
1980
gtcagcacta caggcagcac cagcgaagag gccgtgacag ccgttgccat ctgctgccgg
2040
agccggcacc tggcgcaggc ctcccaggag ctccag
2076

<210> 193
<211> 692
<212> PRT
<213> Homo sapiens

<400> 193
Met Gly Thr Val Ser Ser Arg Arg Ser Trp Trp Pro Leu Pro Leu Leu
 1   5   10   15
Leu Leu Leu Leu Leu Leu Leu Gly Pro Ala Gly Ala Arg Ala Gln Glu
            20   25   30
Asp Glu Asp Gly Asp Tyr Glu Glu Leu Val Leu Ala Leu Arg Ser Glu
        35   40   45
Glu Asp Gly Leu Ala Glu Ala Pro Glu His Gly Thr Thr Ala Thr Phe
    50   55   60
His Arg Cys Ala Lys Asp Pro Trp Arg Leu Pro Gly Thr Tyr Val Val
65   70   75   80
Val Leu Lys Glu Glu Thr His Leu Ser Gln Ser Glu Arg Thr Ala Arg
                85   90   95
Arg Leu Gln Ala Gln Ala Ala Arg Arg Gly Tyr Leu Thr Lys Ile Leu
            100   105   110
His Val Phe His Gly Leu Leu Pro Gly Phe Leu Val Lys Met Ser Gly
        115   120   125
Asp Leu Leu Glu Leu Ala Leu Lys Leu Pro His Val Asp Tyr Ile Glu
    130   135   140
Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg
145   150   155   160
Ile Thr Pro Pro Arg Tyr Arg Ala Asp Glu Tyr Gln Pro Pro Asp Gly
                165   170   175
Gly Ser Leu Val Glu Val Tyr Leu Leu Asp Thr Ser Ile Gln Ser Asp
            180   185   190
His Arg Glu Ile Glu Gly Arg Val Met Val Thr Asp Phe Glu Asn Val
        195   200   205
Pro Glu Glu Asp Gly Thr Arg Phe His Arg Gln Ala Ser Lys Cys Asp
    210   215   220
Ser His Gly Thr His Leu Ala Gly Val Val Ser Gly Arg Asp Ala Gly
225   230   235   240
Val Ala Lys Gly Ala Ser Met Arg Ser Leu Arg Val Leu Asn Cys Gln
                245   250   255
Gly Lys Gly Thr Val Ser Gly Thr Leu Ile Gly Leu Glu Phe Ile Arg
            260   265   270
Lys Ser Gln Leu Val Gln Pro Val Gly Pro Leu Val Val Leu Leu Pro
        275   280   285
Leu Ala Gly Gly Tyr Ser Arg Val Leu Asn Ala Ala Cys Gln Arg Leu
    290   295   300
Ala Arg Ala Gly Val Val Leu Val Thr Ala Ala Gly Asn Phe Arg Asp

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305                 310                 315                 320
Asp Ala Cys Leu Tyr Ser Pro Ala Ser Ala Pro Glu Val Ile Thr Val
                325                 330                 335
Gly Ala Thr Asn Ala Gln Asp Gln Pro Val Thr Leu Gly Thr Leu Gly
            340                 345                 350
Thr Asn Phe Gly Arg Cys Val Asp Leu Phe Ala Pro Gly Glu Asp Ile
        355                 360                 365
Ile Gly Ala Ser Ser Asp Cys Ser Thr Cys Phe Val Ser Gln Ser Gly
    370                 375                 380
Thr Ser Gln Ala Ala Ala His Val Ala Gly Ile Ala Ala Met Met Leu
385                 390                 395                 400
Ser Ala Glu Pro Glu Leu Thr Leu Ala Glu Leu Arg Gln Arg Leu Ile
                405                 410                 415
His Phe Ser Ala Lys Asp Val Ile Asn Glu Ala Trp Phe Pro Glu Asp
            420                 425                 430
Gln Arg Val Leu Thr Pro Asn Leu Val Ala Ala Leu Pro Pro Ser Thr
        435                 440                 445
His Gly Ala Gly Trp Gln Leu Phe Cys Arg Thr Val Trp Ser Ala His
    450                 455                 460
Ser Gly Pro Thr Arg Met Ala Thr Ala Ile Ala Arg Cys Ala Pro Asp
465                 470                 475                 480
Glu Glu Leu Leu Ser Cys Ser Ser Phe Ser Arg Ser Gly Lys Arg Arg
                485                 490                 495
Gly Glu Arg Met Glu Ala Gln Gly Gly Lys Leu Val Cys Arg Ala His
            500                 505                 510
Asn Ala Phe Gly Gly Glu Gly Val Tyr Ala Ile Ala Arg Cys Cys Leu
        515                 520                 525
Leu Pro Gln Ala Asn Cys Ser Val His Thr Ala Pro Pro Ala Glu Ala
    530                 535                 540
Ser Met Gly Thr Arg Val His Cys His Gln Gln Gly His Val Leu Thr
545                 550                 555                 560
Gly Cys Ser Ser His Trp Glu Val Glu Asp Leu Gly Thr His Lys Pro
                565                 570                 575
Pro Val Leu Arg Pro Arg Gly Gln Pro Asn Gln Cys Val Gly His Arg
            580                 585                 590
Glu Ala Ser Ile His Ala Ser Cys Cys His Ala Pro Gly Leu Glu Cys
        595                 600                 605
Lys Val Lys Glu His Gly Ile Pro Ala Pro Gln Glu Gln Val Thr Val
    610                 615                 620
Ala Cys Glu Glu Gly Trp Thr Leu Thr Gly Cys Ser Ala Leu Pro Gly
625                 630                 635                 640
Thr Ser His Val Leu Gly Ala Tyr Ala Val Asp Asn Thr Cys Val Val
                645                 650                 655
Arg Ser Arg Asp Val Ser Thr Thr Gly Ser Thr Ser Glu Glu Ala Val
            660                 665                 670
Thr Ala Val Ala Ile Cys Cys Arg Ser Arg His Leu Ala Gln Ala Ser
        675                 680                 685
Gln Glu Leu Gln
    690
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<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 194
Glu Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val His Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Gly Ser Gly Phe Thr Phe Ser Arg Asn
            20   25   30
Ala Met Phe Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Gly Thr Gly Gly Ala Thr Asn Tyr Ala Asp Ser Val Lys
    50   55   60
Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr Leu
65   70   75   80
Gln Met Asn Ser Leu Arg Ala Glu Asp Met Ala Val Tyr Tyr Cys Ala
                85   90   95
Arg Gly Arg Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100   105   110
Val Ser Ser
        115

<210> 195
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 195
Gly Phe Thr Phe Ser Arg Asn Ala
 1   5

<210> 196
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 196
Ile Gly Thr Gly Gly Ala Thr
 1   5

<210> 197
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 197
Ala Arg Gly Arg Tyr Tyr Phe Asp Tyr
 1   5

<210> 198
<211> 109
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 198
Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly
 1   5   10   15
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Ser
            20   25   30
Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
        35   40   45
Ile Phe Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser
    50   55   60
Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu
65   70   75   80
Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro
                85   90   95
Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 199
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 199
Gln Ser Val Ser Ser Ser Tyr
 1   5

<210> 200
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 200
Gly Ala Ser
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<210> 201
<211> 10
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 201
Gln Gln Tyr Gly Ser Ser Pro Pro Trp Thr
 1   5   10

<210> 202
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
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<222> (1)...(1)
<223> Xaa = Gly

<220>
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<223> Xaa = Phe

<220>
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<223> Xaa = Thr

<220>
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<223> Xaa = Phe or Ser

<220>
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<222> (5)...(5)
<223> Xaa = Ser

<220>
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<222> (6)...(6)
<223> Xaa = Ser or Asn

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa = Tyr or Phe

<220>
<221> VARIANT
<222> (8)...(8)
<223> Xaa = Asp, Leu, or Gly

<400> 202
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 203
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> VARIANT
<222> (1)...(1)
<223> Xaa = Ile

<220>
<221> VARIANT
<222> (2)...(2)
<223> Xaa = Ser, Gln, Asp, or Trp

<220>
<221> VARIANT
<222> (3)...(3)
<223> Xaa = Ser, Glu, Thr, or Phe

<220>
<221> VARIANT
<222> (4)...(4)
<223> Xaa = Asp or Ala

<220>
<221> VARIANT
<222> (5)...(5)
<223> Xaa = Gly or Glu

<220>
<221> VARIANT
<222> (6)...(6)
<223> Xaa = Arg, Ile, or absent

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa = Asp or Glu

<220>
<221> VARIANT
<222> (8)...(8)
<223> Xaa = Lys or Thr

<400> 203
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 204
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
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<222> (1)...(1)
<223> Xaa = Ala or Thr

<220>
<221> VARIANT
<222> (2)...(2)
<223> Xaa = Lys or Arg

<220>
<221> VARIANT
<222> (3)...(3)
<223> Xaa = Glu

<220>
<221> VARIANT
<222> (4)...(4)
<223> Xaa = Met, Pro, Gly, or Asp

<220>
<221> VARIANT
<222> (5)...(5)
<223> Xaa = Val, Ser, Lys, Arg, or absent

<220>
<221> VARIANT
<222> (6)...(6)
<223> Xaa = Tyr, His, Asn, or absent

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa = Tyr

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<222> (8)...(8)
<223> Xaa = Asp or Glu

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<222> (9)...(9)
<223> Xaa = Ile

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<223> Xaa = Leu

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<223> Xaa = Thr

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<223> Xaa = Gly

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<221> VARIANT
<222> (13)...(13)
<223> Xaa = Tyr, Asp, or His

<220>
<221> VARIANT
<222> (14)...(14)
<223> Xaa = His, Asp, Tyr, or absent

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<221> VARIANT
<222> (15)...(15)
<223> Xaa = Asn, Tyr, His, or absent

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<221> VARIANT
<222> (16)...(16)
<223> Xaa = Tyr

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<223> Xaa = Tyr or His

<220>
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<223> Xaa = Gly or Ala

<220>
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<222> (19)...(19)
<223> Xaa = Met

<220>
<221> VARIANT
<222> (20)...(20)
<223> Xaa = Asp

<220>
<221> VARIANT
<222> (21)...(21)
<223> Xaa = Val or Ile

<400> 204
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10   15
Xaa Xaa Xaa Xaa Xaa
            20

<210> 205
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
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<222> (1)...(1)
<223> Xaa = Gln

<220>
<221> VARIANT
<222> (2)...(2)
<223> Xaa = Gly or Ala

<220>
<221> VARIANT
<222> (3)...(3)
<223> Xaa = Ile

<220>
<221> VARIANT
<222> (4)...(4)
<223> Xaa = Asn or Arg

<220>
<221> VARIANT
<222> (5)...(5)

<223> Xaa = Asn

<220>
<221> VARIANT
<222> (6)...(6)
<223> Xaa = Tyr or Asp

<400> 205
Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 206
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> VARIANT
<222> (1)...(1)
<223> Xaa = Thr or Ala

<220>
<221> VARIANT
<222> (2)...(2)
<223> Xaa = Ala or Thr

<220>
<221> VARIANT
<222> (3)...(3)
<223> Xaa = Ser or Phe

<400> 206
Xaa Xaa Xaa
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<210> 207
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<221> VARIANT
<222> (1)...(1)
<223> Xaa = Gln or Leu

<220>
<221> VARIANT
<222> (2)...(2)
<223> Xaa = Gln

<220>
<221> VARIANT
<222> (3)...(3)
<223> Xaa = Tyr, His, or Asp

<220>
<221> VARIANT
<222> (4)...(4)
<223> Xaa = Asn or Tyr

<220>
<221> VARIANT
<222> (5)...(5)
<223> Xaa = Thr or Ser

<220>
<221> VARIANT
<222> (6)...(6)
<223> Xaa = Tyr, Asn, or His

<220>
<221> VARIANT
<222> (7)...(7)
<223> Xaa = Pro

<220>
<221> VARIANT
<222> (8)...(8)
<223> Xaa = Leu, Phe, Arg, or absent

<220>
<221> VARIANT
<222> (9)...(9)
<223> Xaa = Thr

<400> 207
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5