8300A-WO SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> Human Antibodies to GFR-alpha-3 and Methods of Use Thereof

<130> 8300A-WO

<140> To be assigned
<141> Filed herewith

<150> 61/692,029
<151> 2012-08-22

<160> 411

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1
gaagtgcagc tggtggagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttaat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtaa cataggctat 180
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240
ctacagatga acagtctgag agctgaggac acggccttgt atttctgtgc aagagatacc 300
cgtatggcaa ctcgtccctt tgactactgg ggccagggaa ccctggtcac cgtctcctca 360

<210> 2
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Asn Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Phe Cys
                85   90   95
Ala Arg Asp Thr Arg Met Ala Thr Arg Pro Phe Asp Tyr Trp Gly Gln

100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 3
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 3
ggattcacct ttaatgatta tgcc 24

<210> 4
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 4
Gly Phe Thr Phe Asn Asp Tyr Ala
1 5

<210> 5
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 5
attagttgga atagtggtaa cata 24

<210> 6
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 6
Ile Ser Trp Asn Ser Gly Asn Ile
1 5

<210> 7
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 7
gcaagagata cccgtatggc aactcgtccc tttgactac 39

<210> 8
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 8
Ala Arg Asp Thr Arg Met Ala Thr Arg Pro Phe Asp Tyr
 1   5   10

<210> 9
<211> 318
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 9
gacatccaga tgacccagtc tccttccacc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggccagtca gagtattagt aggtggttgg cctggtatca gcagaagcca 120
gggaaagccc ctaagctcct gatctataag gcgtctagtt tagaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca ccatcagcag cctgcagcct 240
gatgattttg caagttatta ctgccaacag tataatagtt attcaacttt tggccagggg 300
accaagctgg agatcaaa 318

<210> 10
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

<210> 11
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 11
cagagtatta gtaggtgg 18

<210> 12
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 12
Gln Ser Ile Ser Arg Trp
 1   5

<210> 13
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 13
aaggcgtct 9

<210> 14
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 14
Lys Ala Ser
 1

<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 15
caacagtata atagttattc aact 24

<210> 16
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 16
Gln Gln Tyr Asn Ser Tyr Ser Thr
 1   5

<210> 17
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 17
gaggtgcagc tgttggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc agctatgcca tgagctgggt ccgccagggt 120
ccagggaagg ggctggagtg ggtctcaggt attagtggta gtggtggcag cacatacaac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240
ttgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaagattct 300
gggacctact ggtactactt tgactactgg ggccagggaa tcctggtcac cgtctcctca 360

<210> 18
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 18
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Ala Met Ser Trp Val Arg Gln Gly Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Gly Ser Gly Gly Ser Thr Tyr Asn Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Lys Asp Ser Gly Thr Tyr Trp Tyr Tyr Phe Asp Tyr Trp Gly Gln
            100   105   110
Gly Ile Leu Val Thr Val Ser Ser
        115   120

<210> 19
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 19
ggattcacct ttagcagcta tgcc 24

<210> 20
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 20
Gly Phe Thr Phe Ser Ser Tyr Ala
 1 5

<210> 21
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 21
attagtggta gtggtggcag caca 24

<210> 22
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 22
Ile Ser Gly Ser Gly Gly Ser Thr
 1 5

<210> 23
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 23
gcgaaagatt ctgggaccta ctggtactac tttgactac 39

<210> 24
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 24
Ala Lys Asp Ser Gly Thr Tyr Trp Tyr Tyr Phe Asp Tyr
1 5 10

<210> 25
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 25
gacatcgtga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60
atcaactgca agtccagcca gaatatttta tacagctccg acaataagaa ctacttagct 120
tggtaccaga agaaaccagg acagcctcct aagctgctca tttactgggc atctacccga 180
gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240
atcatcagcc tgcaggctga agatgtggca ttatattact gtcatcaata ttatactact 300
cctccgacgt tcggccaagg gaccaaagtg gaaatcaaa 339

<210> 26
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 26
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 Asn Ile Leu Tyr Ser
20 25 30
Ser Asp Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Lys Lys Pro Gly Gln
35 40 45
Pro Pro Lys 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 Ile Ser Leu Gln Ala Glu Asp Val Ala Leu Tyr Tyr Cys His Gln
85 90 95
Tyr Tyr Thr Thr Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
100 105 110
Lys

<210> 27
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 27
cagaatattt tatacagctc cgacaataag aactac 36

<210> 28
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 28
Gln Asn Ile Leu Tyr Ser Ser Asp Asn Lys Asn Tyr
 1   5   10

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

<220>
<223> Synthetic

<400> 29
tgggcatct 9

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

<220>
<223> Synthetic

<400> 30
Trp Ala Ser
 1

<210> 31
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 31

catcaatatt atactactcc tccgacg 27

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

<220>
<223> Synthetic

<400> 32
His Gln Tyr Tyr Thr Thr Pro Pro Thr
 1   5

<210> 33
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 33
gaggtgcagt tattggagtc tgggggggaac ttggtacagc cgggggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc agttatgcca tgacctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcaact attagtggta gtggtaccag cacatattac 180
gcagactccg tgaagggccg gttcaccatc tccagggaca attccaggga cacggtgttt 240
ctacaaatga acagcctgag agccgaggac acggccgtat attactgttc gaaaccttct 300
gcattacgat ttttacattg gttagctatg gacgtctggg gccaagggac cctggtcacc 360
gtctcctca 369

<210> 34
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 34
Glu Val Gln Leu Leu Glu Ser Gly Gly Asn Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Ala Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Thr Ile Ser Gly Ser Gly Thr Ser Thr Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Arg Asp Thr Val Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ser Lys Pro Ser Ala Leu Arg Phe Leu His Trp Leu Ala Met Asp Val
            100   105   110
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 35
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 35
ggattcacct ttagcagtta tgcc 24

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

<220>
<223> Synthetic

<400> 36
Gly Phe Thr Phe Ser Ser Tyr Ala
 1 5

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

<220>
<223> Synthetic

<400> 37
attagtggta gtggtaccag caca 24

<210> 38
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 38
Ile Ser Gly Ser Gly Thr Ser Thr
 1 5

<210> 39
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 39

tcgaaacctt ctgcattacg atttttacat tggttagcta tggacgtc 48

<210> 40
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 40
Ser Lys Pro Ser Ala Leu Arg Phe Leu His Trp Leu Ala Met Asp Val
1 5 10 15

<210> 41
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 41
gacatccaga tgacccagtc tccatcctca ctgtctgcat ttgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca ggacattagg aattatttag actggtttca gcagaaacca 120
gggaaagccc ctaagtccct gatctatgct gcatccaatt tgcaaagtgg ggtcccatca 180
aggttcggcg gcagtggatc tgggacagat ttcactctca ccatcaacag cctgcagcct 240
gaagattttg taacttatta ctgccagcag tataattctt accctcccac tttcggcgga 300
gggaccaagg tggagatcaa a 321

<210> 42
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 42
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Phe Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Tyr
20 25 30
Leu Asp Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile
35 40 45
Tyr Ala Ala Ser Asn Leu Gln Ser Gly Val Pro Ser Arg Phe Gly Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Val Thr Tyr Tyr Cys Gln Gln Tyr Asn Ser Tyr Pro Pro
85 90 95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 43
<211> 18

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 43
caggacatta ggaattat 18

<210> 44
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 44
Gln Asp Ile Arg Asn Tyr
1 5

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

<220>
<223> Synthetic

<400> 45
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 46
Ala Ala Ser
1

<210> 47
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 47
cagcagtata attcttaccc tcccact 27

<210> 48

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

<220>
<223> Synthetic

<400> 48
Gln Gln Tyr Asn Ser Tyr Pro Pro Thr
 1   5

<210> 49
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 49
caggttcaac tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc agctatggta tcatctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcagcggtt acaatggtaa cacaaactat 180
gcacagaatc tccagggcag agtcaccatg accacagaca cttccacgac cacagcctac 240
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagatggggt 300
atagcaactc gtccctacta ctactacggt atggacgtct ggggccaagg gaccacggtc 360
accgtctcct ca   372

<210> 50
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

<210> 51
<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 51
ggttacacct ttaccagcta tggt 24

<210> 52
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 53
atcagcggtt acaatggtaa caca 24

<210> 54
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 54
Ile Ser Gly Tyr Asn Gly Asn Thr
1 5

<210> 55
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 55
gcgagatggg gtatagcaac tcgtccctac tactactacg gtatggacgt c 51

<210> 56

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

<220>
<223> Synthetic

<400> 56
Ala Arg Trp Gly Ile Ala Thr Arg Pro Tyr Tyr Tyr Tyr Gly Met Asp
 1   5   10   15
Val

<210> 57
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 57
gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca ggacattacc aattatttag cctggtttca gcagaaacca 120
gggaaagccc ctaagtccct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aagttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgccaacag tataatagtt accctcccac tttcggccct 300
gggaccaaag tggatatcaa a   321

<210> 58
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 58
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Thr Asn Tyr
            20   25   30
Leu Ala Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile
        35   40   45
Tyr Ala 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 Ser Tyr Pro Pro
                85   90   95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100   105

<210> 59
<211> 18
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 59
caggacatta ccaattat 18

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

<220>
<223> Synthetic

<400> 60
Gln Asp Ile Thr Asn Tyr
1 5

<210> 61
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 61
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 62
Ala Ala Ser
1

<210> 63
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 63
caacagtata atagttaccc tcccact 27

<210> 64
<211> 9

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

<210> 65
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 65
gaggtgcagc tgttggagtc tgggggaggc ttggtacagc cgggggggtc cctgagagtc 60
tcctgtgcag cctctggatt cacctttagc acctctgcca tgagctgggt ccgccaggct 120
ccagggaagg ggcttgagtg ggtctcaggt attagtggta ttggaggtgg tagcacatac 180
tacgcagact ccgtgaaggg ccggttcacc atctccagag acaattccaa gaacacgctg 240
tatctgcaaa tgaacagcct gagagccgag gacacggccg tatatttctg tgcgaaattt 300
tataagtgga attcatatat ttttgatctc tggggccagg ggacaatggt caccgtctct 360
tca   363

<210> 66
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 66
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Val Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Thr Ser
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Gly Ile Gly Gly Gly Ser Thr Tyr Tyr Ala Asp Ser
    50   55   60
Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu
65   70   75   80
Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Phe
                85   90   95
Cys Ala Lys Phe Tyr Lys Trp Asn Ser Tyr Ile Phe Asp Leu Trp Gly
            100   105   110
Gln Gly Thr Met Val Thr Val Ser Ser
        115   120

<210> 67
<211> 24
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 67
ggattcacct ttagcacctc tgcc 24

<210> 68
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 68
Gly Phe Thr Phe Ser Thr Ser Ala
1 5

<210> 69
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 69
attagtggta ttggaggtgg tagcaca 27

<210> 70
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 70
Ile Ser Gly Ile Gly Gly Gly Ser Thr
1 5

<210> 71
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 71
gcgaaatttt ataagtggaa ttcatatatt tttgatctc 39

<210> 72
<211> 13

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 72
Ala Lys Phe Tyr Lys Trp Asn Ser Tyr Ile Phe Asp Leu
 1   5   10

<210> 73
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 73
gaaattgtgt tgacgcagtc tccagacacc ctatctttgt ctccagggga aagagccacc 60
ctctcctgca gggccagtca gagtgttagt agcagctact ttgcctggta ccagcagaag 120
cctggccagg ctcccaggct cctcatgtat agtgcatcca gcagggccac tggcatccca 180
gacaggttca gtggcagtgg gtctgggaca gacttctctc tcaccatcag cagattggag 240
cctgaagatt ttgcagtgta ttactgtcag cagtatggta ggtcactcac tttcggcgga 300
gggaccaagg tggagatcaa g   321

<210> 74
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 74
Glu Ile Val Leu Thr Gln Ser Pro Asp 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 Phe Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
        35   40   45
Met Tyr Ser Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser
    50   55   60
Gly Ser Gly Ser Gly Thr Asp Phe Ser Leu Thr Ile Ser Arg Leu Glu
65   70   75   80
Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Arg Ser Leu
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 75
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 75
cagagtgtta gtagcagcta c 21

<210> 76
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 76
Gln Ser Val Ser Ser Ser Tyr
1 5

<210> 77
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 77
agtgcatcc 9

<210> 78
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 78
Ser Ala Ser
1

<210> 79
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 79
cagcagtatg gtaggtcact cact 24

<210> 80
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 80
Gln Gln Tyr Gly Arg Ser Leu Thr
 1   5

<210> 81
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 81
gaggtgcagc tgttggagtc tgggggaggc ttggtacagt ctgggggtc actgagactc 60
tcctgtgcag cctctggatt cagctttaac aactatgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcattt attagtggta gtggtggtag tacatactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa tacgctgtat 240
ctgcaaatga acagcctgag agtcgaggac acggccgttt tttactgtgc gaaagacaga 300
tacaactatg gtaccttctt tgactactgg ggccagggaa ccctggtcac cgtctcctca 360

<210> 82
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 82
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Ser Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Phe Asn Asn Tyr
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Phe Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Val Glu Asp Thr Ala Val Phe Tyr Cys
                85   90   95
Ala Lys Asp Arg Tyr Asn Tyr Gly Thr Phe Phe Asp Tyr Trp Gly Gln
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 83
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 83
ggattcagct ttaacaacta tgcc 24

<210> 84
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 84
Gly Phe Ser Phe Asn Asn Tyr Ala
1 5

<210> 85
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 85
attagtggta gtggtggtag taca 24

<210> 86
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 86
Ile Ser Gly Ser Gly Gly Ser Thr
1 5

<210> 87
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 87
gcgaaagaca gatacaacta tggtaccttc tttgactac 39

<210> 88
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 88
Ala Lys Asp Arg Tyr Asn Tyr Gly Thr Phe Phe Asp Tyr
 1   5   10

<210> 89
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 89
gacatcgtga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60
atcaactgca aatccagcca gagtgtttta tacagctcca acaataagaa ctacttaact 120
tggtaccagc agaaaccagg acagcctcct aaattgctca tttactgggc atctacccgg 180
gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240
atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttatagtact 300
cctccgacgt tcggcctagg gaccaaggtg gaaatcaaa   339

<210> 90
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 90
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 Ser
            20   25   30
Ser Asn Asn Lys Asn Tyr Leu Thr Trp Tyr Gln Gln Lys Pro Gly Gln
        35   40   45
Pro Pro Lys 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 Ser Thr Pro Pro Thr Phe Gly Leu Gly Thr Lys Val Glu Ile
            100   105   110
Lys

<210> 91
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 91
cagagtgttt tatacagctc caacaataag aactac 36

<210> 92
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 92
Gln Ser Val Leu Tyr Ser Ser Asn Asn Lys Asn Tyr
 1 5 10

<210> 93
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 93
tgggcatct 9

<210> 94
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 94
Trp Ala Ser
 1

<210> 95
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 95
cagcaatatt atagtactcc tccgacg 27

<210> 96
<211> 9
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 96
Gln Gln Tyr Tyr Ser Thr Pro Pro Thr
 1   5

<210> 97
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 97
gaagtgcagc tggtggagtc tgggggaggc ttggtacagc ctggggagtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc aactatgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagtt attagtggta gtggtggtag cacatactac 180
gcagactccg tgaagggccg gttcaccatg tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaaccccg 300
agtagagcag ctcgatactt caactacggt atggacgtct ggggccaagg gaccacggtc 360
accgtctcct ca   372

<210> 98
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 98
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Glu
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Val Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Met 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 Pro Pro Ser Arg Ala Ala Arg Tyr Phe Asn Tyr Gly Met Asp
            100   105   110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 99
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 99
ggattcacct ttagcaacta tgcc 24

<210> 100
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 100
Gly Phe Thr Phe Ser Asn Tyr Ala
1 5

<210> 101
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 101
attagtggta gtggtggtag caca 24

<210> 102
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 102
Ile Ser Gly Ser Gly Gly Ser Thr
1 5

<210> 103
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 103
gcgaaacccc cgagtagagc agctcgatac ttcaactacg gtatggacgt c 51

<210> 104
<211> 17
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 104
Ala Lys Pro Pro Ser Arg Ala Ala Arg Tyr Phe Asn Tyr Gly Met Asp
 1   5   10   15
Val

<210> 105
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 105
gccatccgga tgacccagtc cccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattagc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaacag gctaacagtt tcccgttcac tttcggcgga 300
gggaccaagg tggagatcaa a   321

<210> 106
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 106
Ala Ile Arg Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Ser Phe Pro Phe
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 107
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 107
cagggtatta gcagctgg 18

<210> 108
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 108
Gln Gly Ile Ser Ser Trp
 1   5

<210> 109
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 109
gctgcatcc 9

<210> 110
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 110
Ala Ala Ser
 1

<210> 111
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 111
caacaggcta acagtttccc gttcact 27

<210> 112
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 112
Gln Gln Ala Asn Ser Phe Pro Phe Thr
 1   5

<210> 113
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 113
gaagtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120
ccgggcaagg ggctggagtg ggtgtcattt atatggtatg atggaagtaa taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgac agccgaggac acggctgtat attattgtgc gagaagaggt 300
atcctaactg gaactaccgc ttttgatatc tggggccaag ggacaatggt caccgtctct 360
tca   363

<210> 114
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 114
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
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Phe Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Thr Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Arg Gly Ile Leu Thr Gly Thr Thr Ala Phe Asp Ile Trp Gly
            100   105   110
Gln Gly Thr Met Val Thr Val Ser Ser
        115   120

<210> 115
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 115
ggattcacct tcagtagcta tggc 24

<210> 116
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 116
Gly Phe Thr Phe Ser Ser Tyr Gly
1 5

<210> 117
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 117
atatggtatg atggaagtaa taaa 24

<210> 118
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 118
Ile Trp Tyr Asp Gly Ser Asn Lys
1 5

<210> 119
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 119
gcgagaagag gtatcctaac tggaactacc gcttttgata tc 42

<210> 120
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 120
Ala Arg Arg Gly Ile Leu Thr Gly Thr Thr Ala Phe Asp Ile
 1   5   10

<210> 121
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 121
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtgggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcattagc agttatttga attggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatccggag tctgatacct 240
gaagattttg caacttacta ctgtcaacag acttacaata ccccattcac tttcggccct 300
gggaccaagg tggaaatcaa a   321

<210> 122
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 122
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Arg Ser Leu Ile Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Thr Tyr Asn Thr Pro Phe
                85   90   95
Thr Phe Gly Pro Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 123
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 123
cagagcatta gcagttat   18

<210> 124
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 124
Gln Ser Ile Ser Ser Tyr
 1   5

<210> 125
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 125
gctgcatcc   9

<210> 126
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 126
Ala Ala Ser
 1

<210> 127
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 127
caacagactt acaatacccc attcact   27

<210> 128
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 128
Gln Gln Thr Tyr Asn Thr Pro Phe Thr

1 5

<210> 129
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 129
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt cagtttcagt gactatgtca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcatct atatggtttg atggaagtaa tgaactctat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgttt 240
ctgcaaatga acagtctgag agccgaggac acggctgtgt attactgtgc gaaaaaggga 300
gttttggtag ctacctctgc ttttcatatc tggggccaag ggacaatggt caccgtctct 360
tca 363

<210> 130
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 130
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 Ser Phe Ser Asp Tyr
20 25 30
Val Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Ser Ile Trp Phe Asp Gly Ser Asn Glu Leu Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr 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 Lys Lys Gly Val Leu Val Ala Thr Ser Ala Phe His Ile Trp Gly
100 105 110
Gln Gly Thr Met Val Thr Val Ser Ser
115 120

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

<220>
<223> Synthetic

<400> 131
ggattcagtt tcagtgacta tgtc 24

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

<220>
<223> Synthetic

<400> 132
Gly Phe Ser Phe Ser Asp Tyr Val
 1   5

<210> 133
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 133
atatggtttg atggaagtaa tgaa   24

<210> 134
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 134
Ile Trp Phe Asp Gly Ser Asn Glu
 1   5

<210> 135
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 135
gcgaaaaagg gagttttggt agctacctct gcttttcata tc   42

<210> 136
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 136
Ala Lys Lys Gly Val Leu Val Ala Thr Ser Ala Phe His Ile

```
 1               5                  10
```

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

<220>
<223> Synthetic

<400> 137
gccatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gaacattaac aactatttaa attggtatca tcagaaacca 120
gggaaagccc ctaatctcct aatttatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat tacactctca ccatcagcag tctgcaacct 240
gaagattttg gaaattacta ctgtcaacag agttacagca cttccatgta cacttttggc 300
caggggacca agctggagat caaa 324

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

<220>
<223> Synthetic

<400> 138
```
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 Asn Ile Asn Asn Tyr
            20                  25                  30
Leu Asn Trp Tyr His Gln Lys Pro Gly Lys Ala Pro Asn Leu Leu Ile
        35                  40                  45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Gly Asn Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Ser Met
                85                  90                  95
Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
            100                 105
```

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

<220>
<223> Synthetic

<400> 139
cagaacatta acaactat 18

<210> 140
<211> 6
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 140
Gln Asn Ile Asn Asn Tyr
 1   5

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

<220>
<223> Synthetic

<400> 141
gctgcatcc   9

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

<220>
<223> Synthetic

<400> 142
Ala Ala Ser
 1

<210> 143
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 143
caacagagtt acagcacttc catgtacact   30

<210> 144
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 144
Gln Gln Ser Tyr Ser Thr Ser Met Tyr Thr
 1   5   10

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

<220>
<223> Synthetic

<400> 145
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc agctatgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagtt attagtggta gtggaggtag cacatactac 180
gcagacgccg tgaagggccg gttcaccatc tccagagaca attccaagca cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtac gaaaccctca 300
tcttatagca gttcgaactt ctattatggt atggacgtct ggggccaagg gtccacggtc 360
accgtctcct ca 372

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 147
ggattcacct ttagcagcta tgcc 24

<210> 148
<211> 8
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 148
Gly Phe Thr Phe Ser Ser Tyr Ala
 1   5

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

<220>
<223> Synthetic

<400> 149
attagtggta gtggaggtag caca   24

<210> 150
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 150
Ile Ser Gly Ser Gly Gly Ser Thr
 1   5

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

<220>
<223> Synthetic

<400> 151
acgaaaccct catcttatag cagttcgaac ttctattatg gtatggacgt c   51

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

<220>
<223> Synthetic

<400> 152
Thr Lys Pro Ser Ser Tyr Ser Ser Ser Asn Phe Tyr Tyr Gly Met Asp
 1   5   10   15
Val

<210> 153
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 153
gacatccagt tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattagc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcagcag actaacagtt tcccattccc tttcggccct 300
gggaccaaag tggatatcaa a 321

<210> 154
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 154
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Thr Asn Ser Phe Pro Phe
                85   90   95
Pro Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100   105

<210> 155
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 155
cagggtatta gcagctgg 18

<210> 156
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 156
Gln Gly Ile Ser Ser Trp
 1   5

<210> 157
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 157
gctgcatcc   9

<210> 158
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 158
Ala Ala Ser
 1

<210> 159
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 159
cagcagacta acagtttccc attccct   27

<210> 160
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 160
Gln Gln Thr Asn Ser Phe Pro Phe Pro
 1   5

<210> 161

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

<220>
<223> Synthetic

<400> 161
gaggtgcagc tggtggagtc tgggggaggc ttggtacagg ctgggggGTC cctgagactc 60
tcctgtgtag cctctggatt cacctttagc agctatgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagct attagtggta gtggtggtag cacatactcc 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtac gaaaccctca 300
tcttatagca gctcgaactt ctactacggt atggacgtct ggggccaagg gaccacggtc 360
accgtctcct ca 372

<210> 162
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 162
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Ala Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Ser Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Thr Lys Pro Ser Ser Tyr Ser Ser Ser Asn Phe Tyr Tyr Gly Met Asp
            100   105   110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 163
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 163
ggattcacct ttagcagcta tgcc 24

<210> 164
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 164
Gly Phe Thr Phe Ser Ser Tyr Ala
 1   5

<210> 165
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 165
attagtggta gtggtggtag caca   24

<210> 166
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 166
Ile Ser Gly Ser Gly Gly Ser Thr
 1   5

<210> 167
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 167
acgaaaccct catcttatag cagctcgaac ttctactacg gtatggacgt c   51

<210> 168
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 168
Thr Lys Pro Ser Ser Tyr Ser Ser Ser Asn Phe Tyr Tyr Gly Met Asp
 1   5   10   15
Val

<210> 169
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 169
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattagc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatact gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc taggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaacag actaacagtc tcccactcac tttcggccct 300
gggaccaagg tggagatcaa a 321

<210> 170
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 170
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Thr Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Arg 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 Thr Asn Ser Leu Pro Leu
                85   90   95
Thr Phe Gly Pro Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 171
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 171
cagggtatta gcagctgg 18

<210> 172
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 172
Gln Gly Ile Ser Ser Trp
 1   5

<210> 173
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 173
actgcatcc   9

<210> 174
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 174
Thr Ala Ser
 1

<210> 175
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 175
caacagacta acagtctccc actcact   27

<210> 176
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 176
Gln Gln Thr Asn Ser Leu Pro Leu Thr
 1   5

<210> 177
<211> 372

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 177
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc agctatgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagtt attagtggta gtggtggtag cacatactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240
ctacaaatga acagcctgag agccgaggac acggccgttt attactgtgc gaaaccctca 300
tcttatagca gctcgaactt ctactacggt atggacgtct ggggccaagg gaccacggtc 360
accgtctcct ca 372

<210> 178
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 178
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Val Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Lys Pro Ser Ser Tyr Ser Ser Ser Asn Phe Tyr Tyr Gly Met Asp
            100   105   110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 179
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 179
ggattcacct ttagcagcta tgcc 24

<210> 180
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 180
Gly Phe Thr Phe Ser Ser Tyr Ala
 1   5

<210> 181
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 181
attagtggta gtggtggtag caca   24

<210> 182
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 182
Ile Ser Gly Ser Gly Gly Ser Thr
 1   5

<210> 183
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 183
gcgaaaccct catcttatag cagctcgaac ttctactacg gtatggacgt c   51

<210> 184
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 184
Ala Lys Pro Ser Ser Tyr Ser Ser Ser Asn Phe Tyr Tyr Gly Met Asp
 1   5   10   15
Val

<210> 185
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 185
gacatcgtga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattagc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcgaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcaccag cctgcagcct 240
gaagattttg caacttacta ttgtcaacac actaacagtt tcccattcac tttcggccct 300
gggaccaagg tggagatcaa a 321

<210> 186
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 186
Asp Ile Val Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Arg Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Thr Asn Ser Phe Pro Phe
                85   90   95
Thr Phe Gly Pro Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 187
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 187
cagggtatta gcagctgg 18

<210> 188
<211> 6
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 188
Gln Gly Ile Ser Ser Trp
 1   5

<210> 189
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 189
gctgcatcc   9

<210> 190
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 190
Ala Ala Ser
 1

<210> 191
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 191
caacacacta acagtttccc attcact   27

<210> 192
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 192
Gln His Thr Asn Ser Phe Pro Phe Thr
 1   5

<210> 193
<211> 369
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 193
gaggtgcagc tggtggagtc tggggctgag gtgaagaagt ctgggtcctc ggtgaaggtc 60
tcctgcaagg cttctggagg caccttcagc cgctatgcta tcagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggaggg atcatccctc tctttggtac attaaactac 180
gcacagaagt tccagggcag agtcacgctt accacggacg aatcaacgag cacagcctac 240
atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc ggtattttac 300
tatggttcgg ggagttatcg caactggttc gacccctggg gccagggaac cctggtcacc 360
gtctcctca 369

<210> 194
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 194
Glu Val Gln Leu Val Glu Ser Gly Ala Glu Val Lys Lys Ser Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Arg Tyr
            20   25   30
Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Gly Ile Ile Pro Leu Phe Gly Thr Leu Asn Tyr Ala Gln Lys Phe
    50   55   60
Gln Gly Arg Val Thr Leu Thr Thr Asp Glu Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Val Phe Tyr Tyr Gly Ser Gly Ser Tyr Arg Asn Trp Phe Asp Pro
            100   105   110
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 195
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 195
ggaggcacct tcagccgcta tgct 24

<210> 196
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 196
Gly Gly Thr Phe Ser Arg Tyr Ala
 1   5

<210> 197
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 197
atcatccctc tctttggtac atta   24

<210> 198
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 198
Ile Ile Pro Leu Phe Gly Thr Leu
 1   5

<210> 199
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 199
gcggtatttt actatggttc ggggagttat cgcaactggt tcgacccc   48

<210> 200
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 200
Ala Val Phe Tyr Tyr Gly Ser Gly Ser Tyr Arg Asn Trp Phe Asp Pro
 1   5   10   15

<210> 201
<211> 321
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 201
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcatcagc agctatttaa attggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacca ctgtcaacag agttacagta tcccgatcac cttcggccaa 300
gggacacgac tggagattaa a 321

<210> 202
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 202
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr His Cys Gln Gln Ser Tyr Ser Ile Pro Ile
                85   90   95
Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
            100   105

<210> 203
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 203
cagagcatca gcagctat 18

<210> 204
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 204

Gln Ser Ile Ser Ser Tyr
1 5

<210> 205
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 205
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 206
Ala Ala Ser
1

<210> 207
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 207
caacagagtt acagtatccc gatcacc 27

<210> 208
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 208
Gln Gln Ser Tyr Ser Ile Pro Ile Thr
1 5

<210> 209
<211> 357
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 209
gaggtgcagc tgttggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc acctatgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggaatg ggtctcagct attcgtggta atggtgttaa cacatactac 180
ggagactcca tgaagggccg tttcaccatc tccagagaca attccaagga cacgctgtat 240
ttgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaaaataaa 300
tgggagctgc tagtctttga atactggggc cagggaaccc tggtcaccgt ctcctca 357

<210> 210
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 210
Glu Val Gln Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Thr Tyr
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Ala Ile Arg Gly Asn Gly Val Asn Thr Tyr Tyr Gly Asp Ser Met
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asp 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 Asn Lys Trp Glu Leu Leu Val Phe Glu Tyr Trp Gly Gln Gly
            100   105   110
Thr Leu Val Thr Val Ser Ser
        115

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

<220>
<223> Synthetic

<400> 211
ggattcacct ttagcaccta tgcc 24

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

<220>
<223> Synthetic

<400> 212
Gly Phe Thr Phe Ser Thr Tyr Ala

1 5

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

<220>
<223> Synthetic

<400> 213
attcgtggta atggtgttaa caca 24

<210> 214
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 214
Ile Arg Gly Asn Gly Val Asn Thr
1 5

<210> 215
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 215
gcgaaaaata aatgggagct gctagtcttt gaatac 36

<210> 216
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 216
Ala Lys Asn Lys Trp Glu Leu Leu Val Phe Glu Tyr
1 5 10

<210> 217
<211> 318
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 217
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcgagtca ggacattagc aattatttag cctggtatca gcagaaacca 120
gggaaagttc ctaagctcct gatctatgct gcatccactt tgcaatcagg ggtcccattt 180
cggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagatgttg caacttatta ctgtcaaaag tataacagtg cccctccttt cggccctggg 300
accaaagtgg atatcaaa 318

<210> 218
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 218
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 Asp Ile Ser Asn Tyr
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Phe Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Val Ala Thr Tyr Tyr Cys Gln Lys Tyr Asn Ser Ala Pro Pro
                85   90   95
Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100   105

<210> 219
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 219
caggacatta gcaattat 18

<210> 220
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 220
Gln Asp Ile Ser Asn Tyr
 1   5

<210> 221
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 221
gctgcatcc 9

<210> 222
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 222
Ala Ala Ser
 1

<210> 223
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 223
caaaagtata acagtgcccc tcct 24

<210> 224
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 224
Gln Lys Tyr Asn Ser Ala Pro Pro
 1   5

<210> 225
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 225
gaggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60

tcctgtgcag cgtctggatt cagtttcagt gactatgtca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcatct atatggtttg atggaagtaa tgaattctat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgttt 240
ctgcaaatga acagtctgag agccgaggac acggctgtgt attactgtgc gaaaaaggga 300
gtgttggtag ctacctctgc ttttgatatc tggggccaag ggacaatggt caccgtctct 360
tca 363

<210> 226
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 226
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 Ser Phe Ser Asp Tyr
            20   25   30
Val Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Ser Ile Trp Phe Asp Gly Ser Asn Glu Phe Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr 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 Lys Lys Gly Val Leu Val Ala Thr Ser Ala Phe Asp Ile Trp Gly
            100   105   110
Gln Gly Thr Met Val Thr Val Ser Ser
        115   120

<210> 227
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 227
ggattcagtt tcagtgacta tgtc 24

<210> 228
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 228
Gly Phe Ser Phe Ser Asp Tyr Val
 1   5

<210> 229
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 229
atatggtttg atggaagtaa tgaa 24

<210> 230
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 230
Ile Trp Phe Asp Gly Ser Asn Glu
1 5

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

<220>
<223> Synthetic

<400> 231
gcgaaaaagg gagtgttggt agctacctct gcttttgata tc 42

<210> 232
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 232
Ala Lys Lys Gly Val Leu Val Ala Thr Ser Ala Phe Asp Ile
1 5 10

<210> 233
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 233
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattaac aactatttaa attggtatca tcagaaacca 120
gggaaagccc ctaagctcct aatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat tacactctca ccatcagcag tctgcaacct 240
gaagattttg gaaattacta ctgtcaacag agttacagaa cttccatgta cacttttggc 300
caggggacca aggtggaaat caaa 324

<210> 234
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 234
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Asn Asn Tyr
20 25 30
Leu Asn Trp Tyr His Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Gly Asn Tyr Tyr Cys Gln Gln Ser Tyr Arg Thr Ser Met
85 90 95
Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105

<210> 235
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 235
cagagcatta acaactat 18

<210> 236
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 236
Gln Ser Ile Asn Asn Tyr
1 5

<210> 237
<211> 9
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 237
gctgcatcc 9

<210> 238
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 238
Ala Ala Ser
 1

<210> 239
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 239
caacagagtt acagaacttc catgtacact 30

<210> 240
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 240
Gln Gln Ser Tyr Arg Thr Ser Met Tyr Thr
 1   5   10

<210> 241
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 241
gaggtgcagc tggtggagtc tgggggaggc ttggtacggc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat aattatgcca tgcactgggt ccggcaagtt 120
ccagggaagg gcctggagtg ggtctcaggt attacttgga atagtgttag cctaggctat 180
gcggactctg tgaagggccg attcaccatc tccagagaca acgcccagaa ctccctgtat 240

ctgcaaatga acagtctgag aactgtggac acggccttgt attactgtgc aaaagatagg 300
tggggtggaa gttactactt tgacttctgg ggccagggaa ccctggtcac cgtctcctca 360

<210> 242
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 242
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Arg Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asn Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Val Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Thr Trp Asn Ser Val Ser Leu Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Gln Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Thr Val Asp Thr Ala Leu Tyr Tyr Cys
                85   90   95
Ala Lys Asp Arg Trp Gly Gly Ser Tyr Tyr Phe Asp Phe Trp Gly Gln
            100   105   110
Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 243
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 243
ggattcacct ttgataatta tgcc 24

<210> 244
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 244
Gly Phe Thr Phe Asp Asn Tyr Ala
 1   5

<210> 245
<211> 24
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 245
attacttgga atagtgttag ccta 24

<210> 246
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 246
Ile Thr Trp Asn Ser Val Ser Leu
1 5

<210> 247
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 247
gcaaaagata ggtggggtgg aagttactac tttgacttc 39

<210> 248
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 248
Ala Lys Asp Arg Trp Gly Gly Ser Tyr Tyr Phe Asp Phe
1 5 10

<210> 249
<211> 318
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 249
gacatcgtga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcgagtca gggcattagc aattatttag cctggtatca gcagaaacca 120
gggaaagttc ctaaactcct gatctattct gcatccactt tgcaatcagg ggtcccatct 180
cggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcaa cctgcagcct 240

gaagattttg caacttttt ctgtcaaaag tataacagtg cccccacttt cggcggaggg 300
accaaggtgg agatcaaa 318

<210> 250
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 250
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 Ser Asn Tyr
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Leu Leu Ile
        35   40   45
Tyr Ser Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Phe Phe Cys Gln Lys Tyr Asn Ser Ala Pro Thr
                85   90   95
Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 251
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 251
cagggcatta gcaattat 18

<210> 252
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 252
Gln Gly Ile Ser Asn Tyr
 1   5

<210> 253
<211> 9
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 253
tctgcatcc 9

<210> 254
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 254
Ser Ala Ser
1

<210> 255
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 255
caaaagtata acagtgcccc cact 24

<210> 256
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 256
Gln Lys Tyr Asn Ser Ala Pro Thr
1 5

<210> 257
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 257
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt cagtttcagt gactatgtca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcatct atatggtttg atggaagtaa tgaattctat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgttt 240
ctgcaaatga acagtctgag agccgaggac acggctgtgt attactgtgc gaaaaaggga 300
gtgttggtag ctacctctgc ttttgatatc tggggccaag ggacaatggt caccgtctct 360
tca 363

<210> 258
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 258
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 Ser Phe Ser Asp Tyr
            20   25   30
Val Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Ser Ile Trp Phe Asp Gly Ser Asn Glu Phe Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr 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 Lys Lys Gly Val Leu Val Ala Thr Ser Ala Phe Asp Ile Trp Gly
            100   105   110
Gln Gly Thr Met Val Thr Val Ser Ser
        115   120

<210> 259
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 259
ggattcagtt tcagtgacta tgtc   24

<210> 260
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 260
Gly Phe Ser Phe Ser Asp Tyr Val
 1   5

<210> 261
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 261
atatggtttg atggaagtaa tgaa 24

<210> 262
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 262
Ile Trp Phe Asp Gly Ser Asn Glu
1 5

<210> 263
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 263
gcgaaaaagg gagtgttggt agctacctct gcttttgata tc 42

<210> 264
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 264
Ala Lys Lys Gly Val Leu Val Ala Thr Ser Ala Phe Asp Ile
1 5 10

<210> 265
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 265
gaaattgtga tgacgcagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcattaac aactatttaa attggtatca tcagaaacca 120
gggaaagccc ctaagctcct aatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat tacactctca ccatcagcag tctgcaacct 240
gaagattttg gaaattacta ctgtcaacag agttacagaa cttccatgta cacttttggc 300
caggggacca aggtggagat caaa 324

<210> 266
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 266
Glu 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 Ser Ile Asn Asn Tyr
            20   25   30
Leu Asn Trp Tyr His Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Gly Asn Tyr Tyr Cys Gln Gln Ser Tyr Arg Thr Ser Met
                85   90   95
Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 267
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 267
cagagcatta acaactat   18

<210> 268
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 268
Gln Ser Ile Asn Asn Tyr
 1   5

<210> 269
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 269

gctgcatcc 9

<210> 270
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 270
Ala Ala Ser
1

<210> 271
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 271
caacagagtt acagaacttc catgtacact 30

<210> 272
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 272
Gln Gln Ser Tyr Arg Thr Ser Met Tyr Thr
1 5 10

<210> 273
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 273
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcagt acttactact ggagctggtt ccggcagccc 120
ccagggaagg gactggagtg gattgggtat atctattaca gtgggagcac caaccacaac 180
ccctccctca agagtcgagt caccatatca gtagacacgt ccaagaacca gttctccctg 240
aaactgaggt ctgtgaccgc tgcggacacg gccgtgtatt actgtgcgag agtaggtccg 300
gtgggctggg gatcatgggg gaactttgac tactggggcc agggaaccct ggtcaccgtc 360
tcctca 366

<210> 274
<211> 122

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 274
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
 1   5   10   15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Thr Tyr
            20   25   30
Tyr Trp Ser Trp Phe Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
        35   40   45
Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn His Asn Pro Ser Leu Lys
    50   55   60
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65   70   75   80
Lys Leu Arg Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
                85   90   95
Arg Val Gly Pro Val Gly Trp Gly Ser Trp Gly Asn Phe Asp Tyr Trp
            100   105   110
Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 275
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 275
ggtggctcca tcagtactta ctac   24

<210> 276
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 276
Gly Gly Ser Ile Ser Thr Tyr Tyr
 1   5

<210> 277
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 277

atctattaca gtgggagcac c 21

<210> 278
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 278
Ile Tyr Tyr Ser Gly Ser Thr
1 5

<210> 279
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 279
gcgagagtag gtccggtggg ctggggatca tgggggaact ttgactac 48

<210> 280
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 280
Ala Arg Val Gly Pro Val Gly Trp Gly Ser Trp Gly Asn Phe Asp Tyr
1 5 10 15

<210> 281
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 281
gacatccagt tgacccagtc tccatccttc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgct gggccagtca gggcattagc agttatttag cctggtctca gcaaaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccactt tacaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
gaagattttg caacttatta ctgtcaacag cttaatagtt acccgtggac gttcggccaa 300
gggaccaagg tggagatcaa a 321

<210> 282
<211> 107
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 282
Asp Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Trp Ala Ser Gln Gly Ile Ser Ser Tyr
            20   25   30
Leu Ala Trp Ser Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Thr 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 Gln Gln Leu Asn Ser Tyr Pro Trp
                85   90   95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 283
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 283
cagggcatta gcagttat   18

<210> 284
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 284
Gln Gly Ile Ser Ser Tyr
 1   5

<210> 285
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 285
gctgcatcc   9

<210> 286

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

<220>
<223> Synthetic

<400> 286
Ala Ala Ser
 1

<210> 287
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 287
caacagctta atagttaccc gtggacg 27

<210> 288
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 288
Gln Gln Leu Asn Ser Tyr Pro Trp Thr
 1   5

<210> 289
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 289
gaggtgcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc aattatggta tcacctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatggggtgg atcagcgctt acaatggtaa caccggctat 180
gcacagaaat tccagggcag agtcaccatg accacagaca cttccacgag cacagcctac 240
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagagaggat 300
tacgattttt ggagggcttt tgatatctgg ggccaaggga caatggtcac cgtctcttca 360

<210> 290
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 290
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Gly Ile Thr Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Ser Ala Tyr Asn Gly Asn Thr Gly Tyr Ala Gln Lys Phe
    50   55   60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Glu Asp Tyr Asp Phe Trp Arg Ala Phe Asp Ile Trp Gly Gln
            100   105   110
Gly Thr Met Val Thr Val Ser Ser
        115   120

<210> 291
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 291
ggttacacct ttaccaatta tggt   24

<210> 292
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 292
Gly Tyr Thr Phe Thr Asn Tyr Gly
 1   5

<210> 293
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 293
atcagcgctt acaatggtaa cacc   24

<210> 294

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

<220>
<223> Synthetic

<400> 294
Ile Ser Ala Tyr Asn Gly Asn Thr
 1   5

<210> 295
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 295
gcgagagagg attacgattt ttggagggct tttgatatc   39

<210> 296
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 296
Ala Arg Glu Asp Tyr Asp Phe Trp Arg Ala Phe Asp Ile
 1   5   10

<210> 297
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 297
gaaattgtgc tgactcagtc tccaggcacc ctgtctttgt ctccggggga aagagccacc 60
ctctcctgca gggccagtca gagtgttagc agcacctact tagcctggct ccagcagaaa 120
cctggccagg ctcccaggct cctcatctat ggtgcatcca gcagggccac cggcatccca 180
gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcaa cagactggag 240
cctgaagatt ttgcagtgta ttattgtcaa cagtatgctt actcaccgta cacttttggc 300
caggggacca agctggagat caaa   324

<210> 298
<211> 108
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 298
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 Thr
            20   25   30
Tyr Leu Ala Trp Leu Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
        35   40   45
Ile Tyr 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 Asn Arg Leu Glu
65   70   75   80
Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Ala Tyr Ser Pro
                85   90   95
Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
            100   105

<210> 299
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 299
cagagtgtta gcagcaccta c   21

<210> 300
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 300
Gln Ser Val Ser Ser Thr Tyr
 1   5

<210> 301
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 301
ggtgcatcc   9

<210> 302
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 302
Gly Ala Ser
 1

<210> 303
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 303
caacagtatg cttactcacc gtacact 27

<210> 304
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 304
Gln Gln Tyr Ala Tyr Ser Pro Tyr Thr
 1   5

<210> 305
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 305
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt cagtttcagt gactatgtca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcatct atatggtttg atggaagtaa tgaattctat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgttt 240
ctgcaaatga acagtctgag agccgaggac acggctgtgt attactgtgc gaaaaaggga 300
gtgttggtag ctacctctgc ttttgatatc tggggccaag ggacaatggt caccgtctct 360
tca 363

<210> 306
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 306
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 Ser Phe Ser Asp Tyr
            20   25   30
Val Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Ser Ile Trp Phe Asp Gly Ser Asn Glu Phe Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr 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 Lys Lys Gly Val Leu Val Ala Thr Ser Ala Phe Asp Ile Trp Gly
            100   105   110
Gln Gly Thr Met Val Thr Val Ser Ser
        115   120

<210> 307
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 307
ggattcagtt tcagtgacta tgtc   24

<210> 308
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 308
Gly Phe Ser Phe Ser Asp Tyr Val
 1   5

<210> 309
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 309
atatggtttg atggaagtaa tgaa   24

<210> 310
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 310
Ile Trp Phe Asp Gly Ser Asn Glu
 1   5

<210> 311
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 311
gcgaaaaagg gagtgttggt agctacctct gcttttgata tc   42

<210> 312
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 312
Ala Lys Lys Gly Val Leu Val Ala Thr Ser Ala Phe Asp Ile
 1   5   10

<210> 313
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 313
gacatccagt tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gagcattaac aactatttaa attggtatca tcagaaacca 120
gggaaagccc ctaagctcct aatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagtg gcagtggatc tgggacagat tacactctca ccatcagcag tctgcaacct 240
gaagattttg gaaattacta ctgtcaacag agttacagaa cttccatgta cacttttggc 300
caggggacca aggtggaaat caaa   324

<210> 314
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 314

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

<210> 315
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 315
cagagcatta acaactat 18

<210> 316
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 316
```
Gln Ser Ile Asn Asn Tyr
 1               5
```

<210> 317
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 317
gctgcatcc 9

<210> 318
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 318
Ala Ala Ser
 1

<210> 319
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 319
caacagagtt acagaacttc catgtacact 30

<210> 320
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 320
Gln Gln Ser Tyr Arg Thr Ser Met Tyr Thr
 1 5 10

<210> 321
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 321
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc cgggggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc agctatgcca tgagctgggt ccgccaggtt 120
ccagggaagg ggctggagtg ggtctcagct attagtggta gtggtgataa tacatataac 180
gcagagtccg tgaagggccg gttcaccatc tccagagaca attccaagaa tatgttgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaaacaaag 300
tttagcagct cgttgctctt tgactactgg ggccagggaa ccctggtcac cgtctcctca 360

<210> 322
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 322
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

```
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20                  25                  30
Ala Met Ser Trp Val Arg Gln Val Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Ala Ile Ser Gly Ser Gly Asp Asn Thr Tyr Asn Ala Glu Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Met 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 Thr Lys Phe Ser Ser Ser Leu Leu Phe Asp Tyr Trp Gly Gln
            100                 105                 110
Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

<210> 323
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 323
ggattcacct ttagcagcta tgcc 24

<210> 324
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 324
```
Gly Phe Thr Phe Ser Ser Tyr Ala
 1               5
```

<210> 325
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 325
attagtggta gtggtgataa taca 24

<210> 326
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 326
Ile Ser Gly Ser Gly Asp Asn Thr
 1   5

<210> 327
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 327
gcgaaaacaa agtttagcag ctcgttgctc tttgactac   39

<210> 328
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 328
Ala Lys Thr Lys Phe Ser Ser Ser Leu Leu Phe Asp Tyr
 1   5   10

<210> 329
<211> 318
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 329
gacatcgtga tgacccagtc tccttccacc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggccagtca gagtattagt tggtggttgg cctggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctataag gcgtctagtt tagaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca ccatcagcag cctgcagcct 240
gatgattttg caacttatta ctgccaacag tataatagtt attccacttt cggcggaggg 300
accaagctgg agatcaaa   318

<210> 330
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 330
Asp Ile Val Met Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Trp Trp

```
            20                  25                  30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45
Tyr Lys Ala Ser Ser Leu Glu 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
Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Ser Tyr Ser Thr
                85                  90                  95
Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100                 105
```

<210> 331
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 331
cagagtatta gttggtgg 18

<210> 332
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 332
```
Gln Ser Ile Ser Trp Trp
 1               5
```

<210> 333
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 333
aaggcgtct 9

<210> 334
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 334
```
Lys Ala Ser
```

1

<210> 335
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 335
caacagtata atagttattc cact 24

<210> 336
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 336
Gln Gln Tyr Asn Ser Tyr Ser Thr
1 5

<210> 337
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 337
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctacatt cacctttagc agctatgcca tgacctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcaagt attagtggta gtggtgatag cacatactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgttt 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaaaaggat 300
gggcctggga ggtattacgt gaggtacggt atggacgtct ggggccaagg gaccacggtc 360
accgtctcct ca 372

<210> 338
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 338
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 Thr Phe Thr Phe Ser Ser Tyr
20 25 30
Ala Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val

```
        35                  40                  45
Ser Ser Ile Ser Gly Ser Gly Asp Ser Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr 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 Lys Lys Asp Gly Pro Gly Arg Tyr Tyr Val Arg Tyr Gly Met Asp
            100                 105                 110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120


<210> 339
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 339
acattcacct ttagcagcta tgcc                                          24

<210> 340
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 340
Thr Phe Thr Phe Ser Ser Tyr Ala
 1               5


<210> 341
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 341
attagtggta gtggtgatag caca                                          24

<210> 342
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 342
Ile Ser Gly Ser Gly Asp Ser Thr
```

1 5

<210> 343
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 343
gcgaaaaagg atgggcctgg gaggtattac gtgaggtacg gtatggacgt c 51

<210> 344
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 344
Ala Lys Lys Asp Gly Pro Gly Arg Tyr Tyr Val Arg Tyr Gly Met Asp
1 5 10 15
Val

<210> 345
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 345
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattagc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatact acatccagtt tgcaaagtgg ggtcccatcc 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ttgtcaacag gctaacagtt tccctctcac tttcggcgga 300
gggaccaaag tggatatcaa a 321

<210> 346
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 346
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
20 25 30

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


<210> 347
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 347
cagggtatta gcagctgg                                                  18

<210> 348
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 348
Gln Gly Ile Ser Ser Trp
 1               5


<210> 349
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 349
actacatcc                                                            9

<210> 350
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 350
Thr Thr Ser
 1
```

<210> 351
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 351
caacaggcta acagtttccc tctcact 27

<210> 352
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 352
Gln Gln Ala Asn Ser Phe Pro Leu Thr
 1   5

<210> 353
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 353
gaggtgcagc tggtggagtc tgggggaggc ttggaacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc agctatgtca tgagctgggt ccgccaggtt 120
ccagggaagg ggctggagtg ggtctcagtt atcagtggta gtggtggtag cacatactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaaccctca 300
tcttatagca gctcgaactt ccactacggt atggacgtct ggggccaagg gaccacggtc 360
accgtctcct ca 372

<210> 354
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 354
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Glu Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Val Met Ser Trp Val Arg Gln Val Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45

```
Ser Val Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Lys Pro Ser Ser Tyr Ser Ser Ser Asn Phe His Tyr Gly Met Asp
            100                 105                 110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 355
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 355
ggattcacct ttagcagcta tgtc 24

<210> 356
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 356
```
Gly Phe Thr Phe Ser Ser Tyr Val
 1               5
```

<210> 357
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 357
atcagtggta gtggtggtag caca 24

<210> 358
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 358
```
Ile Ser Gly Ser Gly Gly Ser Thr
 1               5
```

<210> 359
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 359
gcgaaaccct catcttatag cagctcgaac ttccactacg gtatggacgt c 51

<210> 360
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 360
Ala Lys Pro Ser Ser Tyr Ser Ser Ser Asn Phe His Tyr Gly Met Asp
 1   5   10   15
Val

<210> 361
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 361
gacatccaga tgacccagtc tccatattcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattagc agctggttag cctggtatca gcagaaacca 120
gggagagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaaaag actaacagtt tcccattcac tttcggccct 300
gggaccaagg tggaaatcaa a 321

<210> 362
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 362
Asp Ile Gln Met Thr Gln Ser Pro Tyr Ser Val Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Arg Ala Pro Lys Leu Leu Ile

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

<210> 363
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 363
cagggtatta gcagctgg 18

<210> 364
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 364
```
Gln Gly Ile Ser Ser Trp
 1               5
```

<210> 365
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 365
gctgcatcc 9

<210> 366
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 366
```
Ala Ala Ser
 1
```

<210> 367
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 367
caaaagacta acagtttccc attcact 27

<210> 368
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 368
Gln Lys Thr Asn Ser Phe Pro Phe Thr
 1   5

<210> 369
<211> 141
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 369
Ala Gly Gly Pro Gly Ser Arg Ala Arg Ala Ala Gly Ala Arg Gly Cys
 1   5   10   15
Arg Leu Arg Ser Gln Leu Val Pro Val Arg Ala Leu Gly Leu Gly His
            20   25   30
Arg Ser Asp Glu Leu Val Arg Phe Arg Phe Cys Ser Gly Ser Cys Arg
        35   40   45
Arg Ala Arg Ser Pro His Asp Leu Ser Leu Ala Ser Leu Leu Gly Ala
    50   55   60
Gly Ala Leu Arg Pro Pro Pro Gly Ser Arg Pro Val Ser Gln Pro Cys
65   70   75   80
Cys Arg Pro Thr Arg Tyr Glu Ala Val Ser Phe Met Asp Val Asn Ser
                85   90   95
Thr Trp Arg Thr Val Asp Arg Leu Ser Ala Thr Ala Cys Gly Cys Leu
            100   105   110
Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Gly Gly Glu Gln Lys
        115   120   125
Leu Ile Ser Glu Glu Asp Leu His His His His His His
    130   135   140

<210> 370
<211> 371
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 370
Asp Pro Leu Pro Thr Glu Ser Arg Leu Met Asn Ser Cys Leu Gln Ala
 1   5   10   15
Arg Arg Lys Cys Gln Ala Asp Pro Thr Cys Ser Ala Ala Tyr His His
            20   25   30
Leu Asp Ser Cys Thr Ser Ser Ile Ser Thr Pro Leu Pro Ser Glu Glu
        35   40   45
Pro Ser Val Pro Ala Asp Cys Leu Glu Ala Ala Gln Gln Leu Arg Asn
    50   55   60
Ser Ser Leu Ile Gly Cys Met Cys His Arg Arg Met Lys Asn Gln Val
65   70   75   80
Ala Cys Leu Asp Ile Tyr Trp Thr Val His Arg Ala Arg Ser Leu Gly
                85   90   95
Asn Tyr Glu Leu Asp Val Ser Pro Tyr Glu Asp Thr Val Thr Ser Lys
            100   105   110
Pro Trp Lys Met Asn Leu Ser Lys Leu Asn Met Leu Lys Pro Asp Ser
        115   120   125
Asp Leu Cys Leu Lys Phe Ala Met Leu Cys Thr Leu Asn Asp Lys Cys
    130   135   140
Asp Arg Leu Arg Lys Ala Tyr Gly Glu Ala Cys Ser Gly Pro His Cys
145   150   155   160
Gln Arg His Val Cys Leu Arg Gln Leu Leu Thr Phe Phe Glu Lys Ala
                165   170   175
Ala Glu Pro His Ala Gln Gly Leu Leu Leu Cys Pro Cys Ala Pro Asn
            180   185   190
Asp Arg Gly Cys Gly Glu Arg Arg Arg Asn Thr Ile Ala Pro Asn Cys
        195   200   205
Ala Leu Pro Pro Val Ala Pro Asn Cys Leu Glu Leu Arg Arg Leu Cys
    210   215   220
Phe Ser Asp Pro Leu Cys Arg Ser Arg Leu Val Asp Phe Gln Thr His
225   230   235   240
Cys His Pro Met Asp Ile Leu Gly Thr Cys Ala Thr Glu Gln Ser Arg
                245   250   255
Cys Leu Arg Ala Tyr Leu Gly Leu Ile Gly Thr Ala Met Thr Pro Asn
            260   265   270
Phe Val Ser Asn Val Asn Thr Ser Val Ala Leu Ser Cys Thr Cys Arg
        275   280   285
Gly Ser Gly Asn Leu Gln Glu Glu Cys Glu Met Leu Glu Gly Phe Phe
    290   295   300
Ser His Asn Pro Cys Leu Thr Glu Ala Ile Ala Ala Lys Met Arg Phe
305   310   315   320
His Ser Gln Leu Phe Ser Gln Asp Trp Pro His Pro Thr Phe Ala Val
                325   330   335
Met Ala His Gln Asn Glu Asn Glu Gln Lys Leu Ile Ser Glu Glu Asp
            340   345   350
Leu Gly Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu His His His
        355   360   365
His His His
    370

<210> 371
<211> 578
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 371
Asp Pro Leu Pro Thr Glu Ser Arg Leu Met Asn Ser Cys Leu Gln Ala
 1   5   10   15
Arg Arg Lys Cys Gln Ala Asp Pro Thr Cys Ser Ala Ala Tyr His His
            20   25   30
Leu Asp Ser Cys Thr Ser Ser Ile Ser Thr Pro Leu Pro Ser Glu Glu
        35   40   45
Pro Ser Val Pro Ala Asp Cys Leu Glu Ala Ala Gln Gln Leu Arg Asn
    50   55   60
Ser Ser Leu Ile Gly Cys Met Cys His Arg Arg Met Lys Asn Gln Val
65   70   75   80
Ala Cys Leu Asp Ile Tyr Trp Thr Val His Arg Ala Arg Ser Leu Gly
                85   90   95
Asn Tyr Glu Leu Asp Val Ser Pro Tyr Glu Asp Thr Val Thr Ser Lys
            100   105   110
Pro Trp Lys Met Asn Leu Ser Lys Leu Asn Met Leu Lys Pro Asp Ser
        115   120   125
Asp Leu Cys Leu Lys Phe Ala Met Leu Cys Thr Leu Asn Asp Lys Cys
    130   135   140
Asp Arg Leu Arg Lys Ala Tyr Gly Glu Ala Cys Ser Gly Pro His Cys
145   150   155   160
Gln Arg His Val Cys Leu Arg Gln Leu Leu Thr Phe Phe Glu Lys Ala
                165   170   175
Ala Glu Pro His Ala Gln Gly Leu Leu Leu Cys Pro Cys Ala Pro Asn
            180   185   190
Asp Arg Gly Cys Gly Glu Arg Arg Arg Asn Thr Ile Ala Pro Asn Cys
        195   200   205
Ala Leu Pro Pro Val Ala Pro Asn Cys Leu Glu Leu Arg Arg Leu Cys
    210   215   220
Phe Ser Asp Pro Leu Cys Arg Ser Arg Leu Val Asp Phe Gln Thr His
225   230   235   240
Cys His Pro Met Asp Ile Leu Gly Thr Cys Ala Thr Glu Gln Ser Arg
                245   250   255
Cys Leu Arg Ala Tyr Leu Gly Leu Ile Gly Thr Ala Met Thr Pro Asn
            260   265   270
Phe Val Ser Asn Val Asn Thr Ser Val Ala Leu Ser Cys Thr Cys Arg
        275   280   285
Gly Ser Gly Asn Leu Gln Glu Glu Cys Glu Met Leu Glu Gly Phe Phe
    290   295   300
Ser His Asn Pro Cys Leu Thr Glu Ala Ile Ala Ala Lys Met Arg Phe
305   310   315   320
His Ser Gln Leu Phe Ser Gln Asp Trp Pro His Pro Thr Phe Ala Val
                325   330   335
Met Ala His Gln Asn Glu Asn Pro Ala Val Arg Pro Gln Pro Trp Asp
            340   345   350
Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
        355   360   365
Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
    370   375   380
Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
385   390   395   400
Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
                405   410   415

```
Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
            420                 425                 430
Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
        435                 440                 445
Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
    450                 455                 460
Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
465                 470                 475                 480
Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu
                485                 490                 495
Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
            500                 505                 510
Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
        515                 520                 525
Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
    530                 535                 540
Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
545                 550                 555                 560
Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
                565                 570                 575
Gly Lys
```

<210> 372
<211> 584
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 372

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

```
        195                 200                 205
Ala Leu Pro Pro Val Ala Pro Asn Cys Leu Glu Leu Arg Arg Leu Cys
    210                 215                 220
Phe Ser Asp Pro Leu Cys Arg Ser Arg Leu Val Asp Phe Gln Thr His
225                 230                 235                 240
Cys His Pro Met Asp Ile Leu Gly Thr Cys Ala Thr Glu Gln Ser Arg
                245                 250                 255
Cys Leu Arg Ala Tyr Leu Gly Leu Ile Gly Thr Ala Met Thr Pro Asn
            260                 265                 270
Phe Val Ser Asn Val Asn Thr Ser Val Ala Leu Ser Cys Thr Cys Arg
        275                 280                 285
Gly Ser Gly Asn Leu Gln Glu Glu Cys Glu Met Leu Glu Gly Phe Phe
    290                 295                 300
Ser His Asn Pro Cys Leu Thr Glu Ala Ile Ala Ala Lys Met Arg Phe
305                 310                 315                 320
His Ser Gln Leu Phe Ser Gln Asp Trp Pro His Pro Thr Phe Ala Val
                325                 330                 335
Met Ala His Gln Asn Glu Asn Pro Ala Val Arg Pro Gln Pro Trp Glu
            340                 345                 350
Pro Arg Gly Pro Thr Ile Lys Pro Cys Pro Pro Cys Lys Cys Pro Ala
        355                 360                 365
Pro Asn Leu Leu Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Ile
    370                 375                 380
Lys Asp Val Leu Met Ile Ser Leu Ser Pro Ile Val Thr Cys Val Val
385                 390                 395                 400
Val Asp Val Ser Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val
                405                 410                 415
Asn Asn Val Glu Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp
            420                 425                 430
Tyr Asn Ser Thr Leu Arg Val Val Ser Ala Leu Pro Ile Gln His Gln
        435                 440                 445
Asp Trp Met Ser Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Asp
    450                 455                 460
Leu Pro Ala Pro Ile Glu Arg Thr Ile Ser Lys Pro Lys Gly Ser Val
465                 470                 475                 480
Arg Ala Pro Gln Val Tyr Val Leu Pro Pro Pro Glu Glu Glu Met Thr
                485                 490                 495
Lys Lys Gln Val Thr Leu Thr Cys Met Val Thr Asp Phe Met Pro Glu
            500                 505                 510
Asp Ile Tyr Val Glu Trp Thr Asn Asn Gly Lys Thr Glu Leu Asn Tyr
        515                 520                 525
Lys Asn Thr Glu Pro Val Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr
    530                 535                 540
Ser Lys Leu Arg Val Glu Lys Lys Asn Trp Val Glu Arg Asn Ser Tyr
545                 550                 555                 560
Ser Cys Ser Val Val His Glu Gly Leu His Asn His His Thr Thr Lys
                565                 570                 575
Ser Phe Ser Arg Thr Pro Gly Lys
            580
```

<210> 373
<211> 371
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 373
Asp Pro Leu Pro Thr Glu Ser Arg Leu Met Asn Ser Cys Leu Gln Ala
 1   5   10   15
Arg Arg Lys Cys Gln Ala Asp Pro Ile Cys Ser Ala Ala Tyr His His
            20   25   30
Leu Asp Ser Cys Thr Ser Ser Ile Ser Thr Pro Leu Pro Ser Glu Glu
        35   40   45
Pro Ser Val Pro Ala Asp Cys Leu Glu Ala Ala Gln Gln Leu Arg Asn
    50   55   60
Ser Ser Leu Ile Gly Cys Met Cys His Arg Arg Met Lys Asn Gln Val
65   70   75   80
Ala Cys Leu Asp Ile Tyr Trp Thr Val His Arg Ala Arg Ser Leu Gly
                85   90   95
Asn Tyr Glu Leu Asp Val Ser Pro Tyr Glu Asp Thr Val Thr Ser Lys
            100   105   110
Pro Trp Lys Met Asn Leu Ser Lys Leu Asn Met Leu Lys Pro Asp Ser
        115   120   125
Asp Leu Cys Leu Lys Phe Ala Met Leu Cys Thr Leu Asn Asp Lys Cys
    130   135   140
Asp Arg Leu Arg Lys Ala Tyr Gly Glu Ala Cys Ser Gly Pro His Cys
145   150   155   160
Gln Arg His Val Cys Leu Arg Gln Leu Leu Thr Phe Phe Glu Lys Ala
                165   170   175
Ala Glu Pro His Ala Gln Gly Leu Leu Leu Cys Pro Cys Ala Pro Asn
            180   185   190
Asp Arg Gly Cys Gly Glu Arg Arg Arg Asn Thr Ile Ala Pro Ser Cys
        195   200   205
Ala Leu Pro Pro Val Ala Pro Asn Cys Leu Glu Leu Arg Arg Leu Cys
    210   215   220
Phe Ser Asp Pro Leu Cys Arg Ser Arg Leu Val Asp Phe Gln Thr His
225   230   235   240
Cys His Pro Met Asp Ile Leu Gly Thr Cys Ala Thr Glu Gln Ser Arg
                245   250   255
Cys Leu Arg Ala Tyr Leu Gly Leu Ile Gly Thr Ala Met Thr Pro Asn
            260   265   270
Phe Val Ser Asn Val Asn Thr Ser Val Ala Leu Ser Cys Thr Cys Arg
        275   280   285
Gly Ser Gly Asn Leu Gln Glu Glu Cys Glu Gln Leu Glu Gly Phe Phe
    290   295   300
Ser His Asn Pro Cys Leu Thr Glu Ala Ile Ala Ala Lys Met Arg Phe
305   310   315   320
His Ser Gln Leu Phe Tyr Gln Asp Trp Pro His Pro Thr Phe Ala Val
                325   330   335
Met Ala His Gln Asn Glu Asn Glu Gln Lys Leu Ile Ser Glu Glu Asp
            340   345   350
Leu Gly Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu His His His
        355   360   365
His His His
    370

<210> 374
<211> 1200
<212> DNA
<213> Homo sapiens

<400> 374

```
atggtgcgcc ccctgaaccc gcgaccgctg ccgcccgtag tcctgatgtt gctgctgctg 60
ctgccgccgt cgccgctgcc tctcgcagcc ggagaccccc ttcccacaga aagccgactc 120
atgaacagct gtctccaggc caggaggaag tgccaggctg atcccacctg cagtgctgcc 180
taccaccacc tggattcctg cacctctagc ataagcaccc cactgccctc agaggagcct 240
tcggtccctg ctgactgcct ggaggcagca cagcaactca ggaacagctc tctgataggc 300
tgcatgtgcc accggcgcat gaagaaccag gttgcctgct tggacatcta ttggaccgtt 360
caccgtgccc gcagccttgg taactatgag ctggatgtct ccccctatga agacacagtg 420
accagcaaac cctggaaaat gaatctcagc aaactgaaca tgctcaaacc agactcagac 480
ctctgcctca agtttgccat gctgtgtact ctcaatgaca agtgtgaccg gctgcgcaag 540
gcctacgggg aggcgtgctc cgggccccac tgccagcgcc acgtctgcct caggcagctg 600
ctcactttct tcgagaaggc cgccgagccc cacgcgcagg gcctgctact gtgcccatgt 660
gcccccaacg accggggctg cggggagcgc cggcgcaaca ccatcgcccc caactgcgcg 720
ctgccgcctg tggcccccaa ctgcctggag ctgcggcgcc tctgcttctc cgacccgctt 780
tgcagatcac gcctggtgga tttccagacc cactgccatc ccatggacat cctaggaact 840
tgtgcaacag agcagtccag atgtctacga gcatacctgg ggctgattgg gactgccatg 900
acccccaact ttgtcagcaa tgtcaacacc agtgttgcct taagctgcac ctgccgaggc 960
agtggcaacc tgcaggagga gtgtgaaatg ctggaagggt tcttctccca caacccctgc 1020
ctcacggagg ccattgcagc taagatgcgt tttcacagcc aactcttctc ccaggactgg 1080
ccacacccta cctttgctgt gatggcacac cagaatgaaa accctgctgt gaggccacag 1140
ccctgggtgc cctctctttt ctcctgcacg cttcccttga ttctgctcct gagcctatgg 1200
```

<210> 375
<211> 400
<212> PRT
<213> Homo sapiens

<400> 375

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

```
Leu Pro Pro Val Ala Pro Asn Cys Leu Glu Leu Arg Arg Leu Cys Phe
                245                 250                 255
Ser Asp Pro Leu Cys Arg Ser Arg Leu Val Asp Phe Gln Thr His Cys
            260                 265                 270
His Pro Met Asp Ile Leu Gly Thr Cys Ala Thr Glu Gln Ser Arg Cys
        275                 280                 285
Leu Arg Ala Tyr Leu Gly Leu Ile Gly Thr Ala Met Thr Pro Asn Phe
    290                 295                 300
Val Ser Asn Val Asn Thr Ser Val Ala Leu Ser Cys Thr Cys Arg Gly
305                 310                 315                 320
Ser Gly Asn Leu Gln Glu Glu Cys Glu Met Leu Glu Gly Phe Phe Ser
                325                 330                 335
His Asn Pro Cys Leu Thr Glu Ala Ile Ala Ala Lys Met Arg Phe His
            340                 345                 350
Ser Gln Leu Phe Ser Gln Asp Trp Pro His Pro Thr Phe Ala Val Met
        355                 360                 365
Ala His Gln Asn Glu Asn Pro Ala Val Arg Pro Gln Pro Trp Val Pro
    370                 375                 380
Ser Leu Phe Ser Cys Thr Leu Pro Leu Ile Leu Leu Leu Ser Leu Trp
385                 390                 395                 400


<210> 376
<211> 632
<212> PRT
<213> Homo sapiens

<400> 376
Asp Arg Leu Asp Cys Val Lys Ala Ser Asp Gln Cys Leu Lys Glu Gln
 1               5                  10                  15
Ser Cys Ser Thr Lys Tyr Arg Thr Leu Arg Gln Cys Val Ala Gly Lys
            20                  25                  30
Glu Thr Asn Phe Ser Leu Ala Ser Gly Leu Glu Ala Lys Asp Glu Cys
        35                  40                  45
Arg Ser Ala Met Glu Ala Leu Lys Gln Lys Ser Leu Tyr Asn Cys Arg
    50                  55                  60
Cys Lys Arg Gly Met Lys Lys Glu Lys Asn Cys Leu Arg Ile Tyr Trp
65                  70                  75                  80
Ser Met Tyr Gln Ser Leu Gln Gly Asn Asp Leu Leu Glu Asp Ser Pro
                85                  90                  95
Tyr Glu Pro Val Asn Ser Arg Leu Ser Asp Ile Phe Arg Val Val Pro
            100                 105                 110
Phe Ile Ser Asp Val Phe Gln Gln Val Glu His Ile Pro Lys Gly Asn
        115                 120                 125
Asn Cys Leu Asp Ala Ala Lys Ala Cys Asn Leu Asp Asp Ile Cys Lys
    130                 135                 140
Lys Tyr Arg Ser Ala Tyr Ile Thr Pro Cys Thr Thr Ser Val Ser Asn
145                 150                 155                 160
Asp Val Cys Asn Arg Arg Lys Cys His Lys Ala Leu Arg Gln Phe Phe
                165                 170                 175
Asp Lys Val Pro Ala Lys His Ser Tyr Gly Met Leu Phe Cys Ser Cys
            180                 185                 190
Arg Asp Ile Ala Cys Thr Glu Arg Arg Arg Gln Thr Ile Val Pro Val
        195                 200                 205
Cys Ser Tyr Glu Glu Arg Glu Lys Pro Asn Cys Leu Asn Leu Gln Asp
    210                 215                 220
Ser Cys Lys Thr Asn Tyr Ile Cys Arg Ser Arg Leu Ala Asp Phe Phe
225                 230                 235                 240
```

```
Thr Asn Cys Gln Pro Glu Ser Arg Ser Val Ser Ser Cys Leu Lys Glu
                245                 250                 255
Asn Tyr Ala Asp Cys Leu Leu Ala Tyr Ser Gly Leu Ile Gly Thr Val
            260                 265                 270
Met Thr Pro Asn Tyr Ile Asp Ser Ser Ser Leu Ser Val Ala Pro Trp
        275                 280                 285
Cys Asp Cys Ser Asn Ser Gly Asn Asp Leu Glu Glu Cys Leu Lys Phe
    290                 295                 300
Leu Asn Phe Phe Lys Asp Asn Thr Cys Leu Lys Asn Ala Ile Gln Ala
305                 310                 315                 320
Phe Gly Asn Gly Ser Asp Val Thr Val Trp Gln Pro Ala Phe Pro Val
                325                 330                 335
Gln Thr Thr Thr Ala Thr Thr Thr Thr Ala Leu Arg Val Lys Asn Lys
            340                 345                 350
Pro Leu Gly Pro Ala Gly Ser Glu Asn Glu Ile Pro Thr His Val Leu
        355                 360                 365
Pro Pro Cys Ala Asn Leu Gln Ala Gln Lys Leu Lys Ser Asn Val Ser
    370                 375                 380
Gly Asn Thr His Leu Cys Ile Ser Asn Gly Asn Tyr Glu Lys Glu Gly
385                 390                 395                 400
Leu Gly Ala Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
                405                 410                 415
Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
            420                 425                 430
Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
        435                 440                 445
Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
    450                 455                 460
Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
465                 470                 475                 480
Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
                485                 490                 495
Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            500                 505                 510
Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        515                 520                 525
Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr
    530                 535                 540
Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
545                 550                 555                 560
Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
                565                 570                 575
Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
            580                 585                 590
Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
        595                 600                 605
Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
    610                 615                 620
Ser Leu Ser Leu Ser Pro Gly Lys
625                 630
```

<210> 377
<211> 405
<212> PRT
<213> Artificial Sequence

<220>

<223> Cynomolgus GFRalpha3: cerebellum cDNA

<400> 377

```
Met Val Arg Pro Pro Ser Pro Arg Pro Leu Pro Pro Val Val Leu Met
 1               5                  10                  15
Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Pro Pro Ser Pro Leu Pro
            20                  25                  30
Leu Ala Ala Gly Asp Pro Leu Pro Thr Glu Ser Arg Leu Met Asn Ser
        35                  40                  45
Cys Leu Gln Ala Arg Arg Lys Cys Gln Ala Asp Pro Ile Cys Ser Ala
    50                  55                  60
Ala Tyr His His Leu Asp Ser Cys Thr Ser Ser Ile Ser Thr Pro Leu
65                  70                  75                  80
Pro Ser Glu Glu Pro Ser Val Pro Ala Asp Cys Leu Glu Ala Ala Gln
                85                  90                  95
Gln Leu Arg Asn Ser Ser Leu Ile Gly Cys Met Cys His Arg Arg Met
            100                 105                 110
Lys Asn Gln Val Ala Cys Leu Asp Ile Tyr Trp Thr Val His Arg Ala
        115                 120                 125
Arg Ser Leu Gly Asn Tyr Glu Leu Asp Val Ser Pro Tyr Glu Asp Thr
    130                 135                 140
Val Thr Ser Lys Pro Trp Lys Met Asn Leu Ser Lys Leu Asn Met Leu
145                 150                 155                 160
Lys Pro Asp Ser Asp Leu Cys Leu Lys Phe Ala Met Leu Cys Thr Leu
                165                 170                 175
Asn Asp Lys Cys Asp Arg Leu Arg Lys Ala Tyr Gly Glu Ala Cys Ser
            180                 185                 190
Gly Pro His Cys Gln Arg His Val Cys Leu Arg Gln Leu Leu Thr Phe
        195                 200                 205
Phe Glu Lys Ala Ala Glu Pro His Ala Gln Gly Leu Leu Leu Cys Pro
    210                 215                 220
Cys Ala Pro Asn Asp Arg Gly Cys Gly Glu Arg Arg Arg Asn Thr Ile
225                 230                 235                 240
Ala Pro Ser Cys Ala Leu Pro Pro Val Ala Pro Asn Cys Leu Glu Leu
                245                 250                 255
Arg Arg Leu Cys Phe Ser Asp Pro Leu Cys Arg Ser Arg Leu Val Asp
            260                 265                 270
Phe Gln Thr His Cys His Pro Met Asp Ile Leu Gly Thr Cys Ala Thr
        275                 280                 285
Glu Gln Ser Arg Cys Leu Arg Ala Tyr Leu Gly Leu Ile Gly Thr Ala
    290                 295                 300
Met Thr Pro Asn Phe Val Ser Asn Val Asn Thr Ser Val Ala Leu Ser
305                 310                 315                 320
Cys Thr Cys Arg Gly Ser Gly Asn Leu Gln Glu Glu Cys Glu Gln Leu
                325                 330                 335
Glu Gly Phe Phe Ser His Asn Pro Cys Leu Thr Glu Ala Ile Ala Ala
            340                 345                 350
Lys Met Arg Phe His Ser Gln Leu Phe Tyr Gln Asp Trp Pro His Pro
        355                 360                 365
Thr Phe Ala Val Met Ala His Gln Asn Glu Asn Arg Ala Leu Arg Ser
    370                 375                 380
Lys Pro Trp Ala Pro Ser Leu Phe Ser Cys Thr Leu Pro Leu Ile Leu
385                 390                 395                 400
Leu Leu Ser Leu Trp
                405
```

<210> 378

<211> 1086
<212> PRT
<213> Artificial Sequence

<220>
<223> Cynomolgus RET without signal sequence

<400> 378
Leu Tyr Phe Ser Arg Asp Ala Tyr Trp Glu Lys Leu Tyr Val Asp Gln
 1   5   10   15
Pro Ala Gly Thr Pro Leu Leu Tyr Val His Ala Leu Arg Asp Ala Pro
            20   25   30
Glu Glu Val Pro Ser Phe Arg Leu Gly Gln His Leu Tyr Gly Thr Tyr
        35   40   45
Arg Thr Arg Leu His Glu Asn Asn Trp Ile Cys Ile Gln Glu Asp Thr
    50   55   60
Gly Leu Leu Tyr Leu Asn Arg Ser Leu Asp Arg Ser Ser Trp Glu Lys
65   70   75   80
Leu Ser Gly Arg Asn Arg Gly Phe Pro Leu Leu Thr Val Tyr Leu Lys
                85   90   95
Val Phe Leu Ser Pro Thr Ser Leu Arg Glu Gly Glu Cys Gln Trp Pro
            100   105   110
Gly Cys Ala Arg Val Tyr Phe Ser Phe Phe Asn Thr Ser Phe Pro Ala
        115   120   125
Cys Thr Ser Leu Lys Pro Arg Glu Leu Cys Phe Pro Glu Thr Arg Pro
    130   135   140
Ser Phe Arg Ile Arg Glu Asn Arg Pro Pro Gly Thr Phe His Gln Phe
145   150   155   160
Arg Leu Leu Pro Val Gln Phe Leu Cys Pro Asn Ile Ser Val Ala Tyr
                165   170   175
Arg Leu Leu Glu Gly Glu Gly Leu Pro Phe Arg Cys Ala Pro Asp Ser
            180   185   190
Leu Glu Val Ser Thr Arg Trp Ala Leu Asp Arg Glu Gln Arg Glu Lys
        195   200   205
Tyr Glu Leu Val Ala Val Cys Thr Val His Ala Gly Ala Arg Glu Glu
    210   215   220
Val Val Met Val Pro Phe Pro Val Thr Val Tyr Asp Glu Asp Asp Ser
225   230   235   240
Ala Pro Thr Phe Pro Ala Gly Val Asp Thr Ala Ser Ala Val Val Glu
                245   250   255
Phe Lys Arg Lys Glu Asp Thr Val Val Ala Thr Leu Arg Val Phe Asp
            260   265   270
Ala Asp Val Val Pro Ala Ser Gly Glu Leu Val Arg Arg Tyr Thr Ser
        275   280   285
Thr Leu Leu Pro Gly Asp Thr Trp Thr Gln Gln Thr Phe Arg Val Glu
    290   295   300
His Trp Pro Asn Glu Thr Ser Val Gln Ala Asn Gly Ser Phe Val Arg
305   310   315   320
Ala Thr Val His Asp Tyr Arg Leu Val Leu Asn Arg Asn Leu Ser Ile
                325   330   335
Ser Glu Asn Arg Thr Met Gln Leu Ala Val Leu Val Asn Asp Ser Asp
            340   345   350
Phe Gln Gly Pro Gly Ala Gly Val Leu Leu Leu His Phe Asn Val Ser
        355   360   365
Val Leu Pro Val Ser Leu His Leu Pro Ser Ser Tyr Ser Leu Ser Val
    370   375   380
Ser Arg Arg Ala Arg Arg Phe Ala Gln Ile Gly Lys Val Cys Val Glu
385   390   395   400

```
Asn Cys Gln Ala Phe Ser Gly Ile Asn Val Gln Tyr Glu Leu His Ser
                405                 410                 415
Ser Gly Ala Asn Cys Ser Thr Leu Gly Val Val Thr Ser Ala Glu Asp
            420                 425                 430
Thr Ser Gly Ile Leu Phe Val Asn Asp Thr Lys Ala Leu Arg Arg Pro
        435                 440                 445
Lys Cys Ala Glu Leu His Tyr Met Val Val Ala Thr Asn His Gln Thr
    450                 455                 460
Ser Arg Gln Ala Gln Ala Gln Leu Leu Val Thr Val Glu Gly Leu Tyr
465                 470                 475                 480
Val Ala Glu Glu Ala Gly Cys Pro Leu Ser Cys Ala Val Ser Lys Arg
                485                 490                 495
Arg Pro Glu Cys Glu Glu Cys Gly Gly Leu Gly Ser Pro Thr Gly Arg
            500                 505                 510
Cys Glu Trp Arg Gln Gly Asp Gly Lys Gly Ile Thr Arg Asn Phe Ser
        515                 520                 525
Thr Cys Ser Pro Ser Thr Lys Thr Cys Pro Asp Gly His Cys Asp Val
    530                 535                 540
Val Glu Thr Gln Asp Ile Asn Ile Cys Pro Gln Asp Cys Leu Arg Gly
545                 550                 555                 560
Ser Ile Val Gly Gly His Glu Pro Gly Glu Pro Arg Gly Ile Lys Ala
                565                 570                 575
Gly Tyr Gly Thr Cys Asn Cys Phe Pro Glu Glu Glu Lys Cys Phe Cys
            580                 585                 590
Glu Pro Glu Asp Ile Gln Asp Pro Leu Cys Asp Glu Leu Cys Arg Thr
        595                 600                 605
Val Ile Ala Ala Ala Val Leu Phe Ser Phe Ile Val Ser Val Leu Leu
    610                 615                 620
Ser Ala Phe Cys Ile His Arg Tyr His Lys Phe Ala His Lys Pro Pro
625                 630                 635                 640
Ile Pro Ser Ala Glu Met Thr Phe Arg Arg Pro Ala Gln Ala Phe Pro
                645                 650                 655
Val Ser Tyr Ser Ser Ser Gly Ala Arg Arg Pro Ser Leu Asp Ser Met
            660                 665                 670
Glu Asn Gln Val Ser Val Asp Ala Phe Lys Ile Pro Glu Asp Pro Lys
        675                 680                 685
Trp Glu Phe Pro Arg Lys Asn Leu Val Leu Gly Lys Thr Leu Gly Glu
    690                 695                 700
Gly Glu Phe Gly Lys Val Val Lys Ala Thr Ala Phe Arg Leu Lys Gly
705                 710                 715                 720
Arg Ala Gly Tyr Thr Thr Val Ala Val Lys Met Leu Lys Glu Asn Ala
                725                 730                 735
Ser Pro Ser Glu Leu Arg Asp Leu Leu Ser Glu Phe Asn Leu Leu Lys
            740                 745                 750
Gln Val Asn His Pro His Val Ile Lys Leu Tyr Gly Ala Cys Ser Gln
        755                 760                 765
Asp Gly Pro Leu Leu Leu Ile Val Glu Tyr Ala Lys Tyr Gly Ser Leu
    770                 775                 780
Arg Gly Phe Leu Arg Glu Ser Arg Lys Val Gly Pro Gly Tyr Leu Gly
785                 790                 795                 800
Ser Gly Gly Ser Arg Asn Ser Ser Ser Leu Asp His Pro Asp Glu Arg
                805                 810                 815
Ala Leu Thr Met Gly Asp Leu Ile Ser Phe Ala Trp Gln Ile Ser Arg
            820                 825                 830
Gly Met Gln Tyr Leu Ala Glu Met Lys Leu Val His Arg Asp Leu Ala
        835                 840                 845
Ala Arg Asn Ile Leu Val Ala Glu Gly Arg Lys Met Lys Ile Ser Asp
    850                 855                 860
```

```
Phe Gly Leu Ser Arg Asp Val Tyr Glu Glu Asp Ser Tyr Val Lys Arg
865                 870                 875                 880
Ser Lys Gly Arg Ile Pro Val Lys Trp Met Ala Ile Glu Ser Leu Phe
                885                 890                 895
Asp His Ile Tyr Thr Thr Gln Ser Asp Val Trp Ser Phe Gly Val Leu
            900                 905                 910
Leu Trp Glu Ile Val Thr Leu Gly Gly Asn Pro Tyr Pro Gly Ile Pro
        915                 920                 925
Pro Glu Arg Leu Phe Asn Leu Leu Lys Thr Gly His Arg Met Glu Arg
    930                 935                 940
Pro Asp Asn Cys Ser Glu Glu Met Tyr Arg Leu Met Leu Gln Cys Trp
945                 950                 955                 960
Lys Gln Glu Pro Asp Lys Arg Pro Val Phe Ala Asp Ile Ser Lys Asp
                965                 970                 975
Leu Glu Lys Met Met Val Lys Ser Arg Asp Tyr Leu Asp Leu Ala Ala
            980                 985                 990
Ser Thr Pro Ser Asp Ser Leu Leu Tyr Asp Asp Gly Leu Ser Glu Glu
        995                 1000                1005
Glu Thr Pro Leu Val Asp Cys Asn Asn Ala Pro Leu Pro Arg Ala Leu
    1010                1015                1020
Pro Ser Thr Trp Ile Glu Asn Lys Leu Tyr Gly Met Ser Asp Pro Asn
1025                1030                1035                1040
Trp Pro Gly Glu Ser Pro Val Pro Leu Thr Arg Ala Asp Gly Thr Asn
                1045                1050                1055
Thr Gly Phe Pro Arg Tyr Ala Asn Asp Ser Val Tyr Ala Asn Trp Met
            1060                1065                1070
Leu Ser Pro Ser Ala Ala Lys Leu Met Asp Thr Phe Asp Ser
        1075                1080                1085


<210> 379
<211> 371
<212> PRT
<213> Artificial Sequence

<220>
<223> Mouse GFRalpha3-MMH
      aa 1-343: N29-N371 of Ac. No. AAH66202.1
      aa 344-371: myc-GG linker-myc-hexahistidine tag

<400> 379
Asn Ser Leu Ala Thr Glu Asn Arg Phe Val Asn Ser Cys Thr Gln Ala
 1                5                  10                  15
Arg Lys Lys Cys Glu Ala Asn Pro Ala Cys Lys Ala Ala Tyr Gln His
            20                  25                  30
Leu Gly Ser Cys Thr Ser Ser Leu Ser Arg Pro Leu Pro Leu Glu Glu
        35                  40                  45
Ser Ala Met Ser Ala Asp Cys Leu Glu Ala Ala Glu Gln Leu Arg Asn
    50                  55                  60
Ser Ser Leu Ile Asp Cys Arg Cys His Arg Arg Met Lys His Gln Ala
65                  70                  75                  80
Thr Cys Leu Asp Ile Tyr Trp Thr Val His Pro Ala Arg Ser Leu Gly
                85                  90                  95
Asp Tyr Glu Leu Asp Val Ser Pro Tyr Glu Asp Thr Val Thr Ser Lys
            100                 105                 110
Pro Trp Lys Met Asn Leu Ser Lys Leu Asn Met Leu Lys Pro Asp Ser
        115                 120                 125
Asp Leu Cys Leu Lys Phe Ala Met Leu Cys Thr Leu His Asp Lys Cys
```

```
    130                 135                 140
Asp Arg Leu Arg Lys Ala Tyr Gly Glu Ala Cys Ser Gly Ile Arg Cys
145                 150                 155                 160
Gln Arg His Leu Cys Leu Ala Gln Leu Arg Ser Phe Phe Glu Lys Ala
                165                 170                 175
Ala Glu Ser His Ala Gln Gly Leu Leu Leu Cys Pro Cys Ala Pro Glu
            180                 185                 190
Asp Ala Gly Cys Gly Glu Arg Arg Arg Asn Thr Ile Ala Pro Ser Cys
        195                 200                 205
Ala Leu Pro Ser Val Thr Pro Asn Cys Leu Asp Leu Arg Ser Phe Cys
    210                 215                 220
Arg Ala Asp Pro Leu Cys Arg Ser Arg Leu Met Asp Phe Gln Thr His
225                 230                 235                 240
Cys His Pro Met Asp Ile Leu Gly Thr Cys Ala Thr Glu Gln Ser Arg
                245                 250                 255
Cys Leu Arg Ala Tyr Leu Gly Leu Ile Gly Thr Ala Met Thr Pro Asn
            260                 265                 270
Phe Ile Ser Lys Val Asn Thr Thr Val Ala Leu Ser Cys Ser Cys Arg
        275                 280                 285
Gly Ser Gly Asn Leu Gln Asp Glu Cys Glu Gln Leu Glu Arg Ser Phe
    290                 295                 300
Ser Gln Asn Pro Cys Leu Val Glu Ala Ile Ala Ala Lys Met Arg Phe
305                 310                 315                 320
His Arg Gln Leu Phe Ser Gln Asp Trp Ala Asp Ser Thr Phe Ser Val
                325                 330                 335
Val Gln Gln Gln Asn Ser Asn Glu Gln Lys Leu Ile Ser Glu Glu Asp
            340                 345                 350
Leu Gly Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu His His His
        355                 360                 365
His His His
    370
```

<210> 380
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 380
caggttcaac tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc agctatggta tcatctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcagcggtt acaatggtaa cacaaactat 180
acacagaatc tccagggcag agtcaccatg accacagaca cttccacgac cacagcctac 240
atggagctga ggagcctgag atctgacgac acggccgtgt attactgtgc gagatggggt 300
atagcaactc gtccctacta ctactacggt atggacgtct ggggccaagg gaccacggtc 360
accgtctcct ca 372

<210> 381
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 381
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20   25   30
Gly Ile Ile Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Ser Gly Tyr Asn Gly Asn Thr Asn Tyr Thr Gln Asn Leu
    50   55   60
Gln Gly Arg Val Thr Met Thr Thr Asp Thr Ser Thr Thr Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Trp Gly Ile Ala Thr Arg Pro Tyr Tyr Tyr Tyr Gly Met Asp
            100   105   110
Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 382
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 382
ggttacacct ttaccagcta tggt   24

<210> 383
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 383
Gly Tyr Thr Phe Thr Ser Tyr Gly
 1   5

<210> 384
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 384
atcagcggtt acaatggtaa caca   24

<210> 385
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 385
Ile Ser Gly Tyr Asn Gly Asn Thr
 1   5

<210> 386
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 386
gcgagatggg gtatagcaac tcgtccctac tactactacg gtatggacgt c   51

<210> 387
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 387
Ala Arg Trp Gly Ile Ala Thr Arg Pro Tyr Tyr Tyr Tyr Gly Met Asp
 1   5   10   15
Val

<210> 388
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 388
gacatccaga tgacccagtc tccatcctca ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca ggacattacc aattatttag cctggtttca gcagaaacca 120
gggaaagccc ctaagtccct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aagttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ctgccaacag tataatagtt accctcccac tttcggccct 300
gggaccaaag tggatatcaa a   321

<210> 389
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 389
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 Asp Ile Thr Asn Tyr
            20   25   30
Leu Ala Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile
        35   40   45
Tyr Ala 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 Ser Tyr Pro Pro
                85   90   95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100   105

<210> 390
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 390
caggacatta ccaattat   18

<210> 391
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 391
Gln Asp Ile Thr Asn Tyr
 1   5

<210> 392
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 392
gctgcatcc   9

<210> 393
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 393
Ala Ala Ser
 1

<210> 394
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 394
caacagtata atagttaccc tcccact 27

<210> 395
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 395
Gln Gln Tyr Asn Ser Tyr Pro Pro Thr
 1   5

<210> 396
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 396
gaggtgcagt tattggagtc tgggggggaac ttggtacagc cgggggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttagc agttatgcca tgacctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcaact attagtggta gtggtaccag cacatattac 180
gcagactccg tgaagggccg gttcaccatc tccagggaca attccaggga cacggtgttt 240
ctacaaatga acagcctgag agccgaggac acggccgtat attactgttc gaaaccttct 300
gcattacgat ttttacattg gttatgtatg gacgtctggg gccaagggac cctggtcacc 360
gtctcctca 369

<210> 397
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 397

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

<210> 398
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 398
ggattcacct ttagcagtta tgcc 24

<210> 399
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 399
```
Gly Phe Thr Phe Ser Ser Tyr Ala
 1               5
```

<210> 400
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 400
attagtggta gtggtaccag caca 24

<210> 401
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 401
Ile Ser Gly Ser Gly Thr Ser Thr
 1   5

<210> 402
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 402
tcgaaacctt ctgcattacg atttttacat tggttatgta tggacgtc   48

<210> 403
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 403
Ser Lys Pro Ser Ala Leu Arg Phe Leu His Trp Leu Cys Met Asp Val
 1   5   10   15

<210> 404
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 404
gacatccaga tgacccagtc tccatcctca ctgtctgcat ttgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca ggacattagg aattatttag actggtttca gcagaaacca 120
gggaaagccc ctaagtccct gatctatgct gcatccaatt tgcaaagtgg ggtcccatca 180
aggttcggcg gcagtggatc tgggacagat ttcactctca ccatcaacag cctgcagcct 240
gaagattttg taacttatta ctgccagcag tataattctt accctcccac tttcggcgga 300
gggaccaagg tggagatcaa a   321

<210> 405
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 405
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Phe Val Gly

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

<210> 406
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 406
caggacatta ggaattat 18

<210> 407
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 407
```
Gln Asp Ile Arg Asn Tyr
 1               5
```

<210> 408
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 408
gctgcatcc 9

<210> 409
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 409
Ala Ala Ser
 1

<210> 410
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 410
cagcagtata attcttaccc tcccact 27

<210> 411
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 411
Gln Gln Tyr Asn Ser Tyr Pro Pro Thr
 1   5