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<110> Regeneron Pharmaceuticals, Inc

<120> Anti-GITR Antibodies and Uses Thereof

<130> 238811-34.4 (10206WO01)

<150> 62/348,353
<151> 2016-06-10

<150> 62/500,312
<151> 2017-05-02

<150> 62/432,023
<151> 2016-12-09

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35 40 45

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

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

Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
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20 25 30

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

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

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

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

Ala Arg Gly Gly Ala Leu Gly Val Asp Tyr Tyr Tyr Gly Met Asp Val
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
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35 40 45

Tyr Ser 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 Leu Gln Asn Tyr Asn Tyr Pro Trp
85 90 95

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

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

Thr 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 Lys Ala Glu Asp Thr Ala Glu Tyr Tyr Cys
85 90 95

Ala Lys Asp Gly Gly Gln Leu Ala Tyr Gln Tyr Tyr Tyr Gly Met Asp
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
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Leu Gly Trp Tyr 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 Ser Gly
50 55 60

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

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
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20 25 30

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35 40 45

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

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

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

Ala Arg Gly Gly Met Leu Gly Arg Asp Tyr Tyr Tyr Gly Met Asp Val
100 105 110

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


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


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


Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Asn
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Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
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35 40 45

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

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

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

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

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cggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240

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<400> 74

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 Lys Asn Asp
20 25 30

Leu Gly Trp Phe Gln Gln Lys Ala Gly Lys Ala Pro Lys Arg Leu Phe
35 40 45

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

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

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

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

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<400> 75
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<210> 76
<211> 6
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<220>
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<400> 76

Gln Asp Ile Lys Asn Asp
1 5

<210> 77
<211> 9
<212> DNA
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<220>
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<400> 77
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<210> 78
<211> 3

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<220>
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<400> 78

Ala Thr Ser
1

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<211> 27
<212> DNA
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<220>
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<400> 79
ctacaggttc atagttaccc tcggacg 27

<210> 80
<211> 9
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<220>
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<400> 80

Leu Gln Val His Ser Tyr Pro Arg Thr
1 5

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<220>
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tcctgtgaag cgtctggatt caccttcagc aactatggct ttcactgggt ccgccaggct 120

ccaggcaagg ggctggattg ggtggcagtt atatggtatg ctggaagtaa taagttctat 180

gtagactccg tgcagggccg attcaccatc tccagagaca attccaaaca aatattgttt 240

cttcaaatga acagcctgag agccgaggac tcggctgttt attactgtgt gagaggggg 300

atactgggca tagactacta ctccggtatg gacgtctggg gccaagggac cacggtcacc 360

gtctcctca 369

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<212> PRT
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<220>
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<400> 82

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1 5 10 15

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

Gly Phe His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Asp Trp Val
35 40 45

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

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

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

Val Arg Gly Gly Ile Leu Gly Ile Asp Tyr Tyr Ser Gly Met Asp Val
100 105 110

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

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<211> 24
<212> DNA
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<220>
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<400> 83
ggattcacct tcagcaacta tggc 24

<210> 84
<211> 8
<212> PRT
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<220>
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<400> 84

Gly Phe Thr Phe Ser Asn Tyr Gly
1 5

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

<220>
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<400> 85
atatggtatg ctggaagtaa taag 24

<210> 86
<211> 8
<212> PRT
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<220>
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<400> 86

Ile Trp Tyr Ala Gly Ser Asn Lys
1 5

<210> 87
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
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<400> 87
gtgagagggg ggatactggg catagactac tactccggta tggacgtc 48

<210> 88
<211> 16
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<400> 88

Val Arg Gly Gly Ile Leu Gly Ile Asp Tyr Tyr Ser Gly Met Asp Val
1 5 10 15

<210> 89
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
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<400> 89
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atcacttgcc gggcaagtca ggacattaga aatgatttag gctggtatca gcagagacca 120

gggaaggccc ctaagttcct gatctattct acatccagtt tacaaagtgg ggtcccatca 180

agattcagcg gcagtggatc tggcacagat ttcattctca ccatcagcag cctgcagcct 240

gaggattttg ccacttatta ctgtctacaa agtcacaatt atccgtggac gttcggccac 300

gggaccaagg tggaaatcaa a 321

<210> 90
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
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<400> 90

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 Asp Ile Arg Asn Asp
20 25 30

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

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

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

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

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

<210> 91
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
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<400> 91
caggacatta gaaatgat 18

<210> 92
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 92

Gln Asp Ile Arg Asn Asp
1 5

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

<220>
<223> synthetic

<400> 93
tctacatcc 9

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

<220>
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<400> 94

Ser Thr Ser
1

<210> 95
<211> 27
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<220>

<223> synthetic

<400> 95
ctacaaagtc acaattatcc gtggacg 27

<210> 96
<211> 9
<212> PRT
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<220>
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<400> 96

Leu Gln Ser His Asn Tyr Pro Trp Thr
1 5

<210> 97
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
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<400> 97
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tcctgtgcag tgtctggatt caccctcagt agttatggca tggactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtt atatggtatg acggaagtaa taaatactat 180

tcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacactgttt 240

ctgcaaatga acagcctgag agccgacgac acggctgtgt attattgtgc gagagacggg 300

gaactgggac tggactacta ctccggtatg gacgtctggg gccaagggac cacggtcacc 360

gtctcctca 369

<210> 98
<211> 123
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 98

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 Val Ser Gly Phe Thr Leu Ser Ser Tyr
20 25 30

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

Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ser 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 Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

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

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
ggattcaccc tcagtagtta tggc 24

<210> 100
<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 100

Gly Phe Thr Leu Ser Ser Tyr Gly
1 5

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

<220>
<223> synthetic

<400> 101
atatggtatg acggaagtaa taaa 24

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

<220>
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<400> 102

Ile Trp Tyr Asp Gly Ser Asn Lys
1 5

<210> 103
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 103
gcgagagacg gggaactggg actggactac tactccggta tggacgtc 48

<210> 104
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
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<400> 104

Ala Arg Asp Gly Glu Leu Gly Leu Asp Tyr Tyr Ser Gly Met Asp Val
1 5 10 15

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

<220>
<223> synthetic

<400> 105
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atcacttgcc gggcaagtca ggacattaga aatgatttag gctggtatca gcagaaacca 120

gggaaagccc ctaagcgcct gatctatggt gcatccagtt tgcaaagtgg tgtcccatca 180

aggttcagcg gcagtggatc tgggacagag ttcactctca caatcagcag cctgcagcct 240

gaagattttg caacttatta ttgtctacag cttaatagtt accctcggac gttcggccaa 300

gggaccaagg tggaaatcaa a 321

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

<220>
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<400> 106

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

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

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

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

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

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

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
            100                 105
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<210> 107
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 107
caggacatta gaaatgat 18

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

<220>
<223> synthetic

<400> 108

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Gln Asp Ile Arg Asn Asp
1               5
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<210> 109
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 109
ggtgcatcc 9

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

<220>
<223> synthetic

<400> 110

Gly Ala Ser
1

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

<220>
<223> synthetic

<400> 111
ctacagctta atagttaccc tcggacg 27

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

<220>
<223> synthetic

<400> 112

Leu Gln Leu Asn Ser Tyr Pro Arg Thr
1 5

<210> 113
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 113
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60

tcctgtgcag cctctggatt caccttcagt agctttggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtg atatcatatg atggaagaaa tagatactat 180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240

ctgcaaatga acagtctgag cgctgaggac acggctatgt tttactgtgc gaaagatggc 300

tttggcaact cttttgacta ctggggccag ggaaccctgg tcaccgtctc ctca 354

<210> 114
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 114

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

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

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

Ala Val Ile Ser Tyr Asp Gly Arg Asn Arg Tyr Tyr Ala Asp Ser Val
50 55 60

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


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


Ala Lys Asp Gly Phe Gly Asn Ser Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110


Leu Val Thr Val Ser Ser
        115


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

<220>
<223>  synthetic

<400>  115
ggattcacct tcagtagctt tggc                                              24


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

<220>
<223>  synthetic

<400>  116

Gly Phe Thr Phe Ser Ser Phe Gly
1               5


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

<220>
<223>  synthetic
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<400> 117
atatcatatg atggaagaaa taga 24

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

<220>
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<400> 118

Ile Ser Tyr Asp Gly Arg Asn Arg
1 5

<210> 119
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 119
gcgaaagatg gctttggcaa ctcttttgac tac 33

<210> 120
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
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<400> 120

Ala Lys Asp Gly Phe Gly Asn Ser Phe Asp Tyr
1 5 10

<210> 121
<211> 336
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic

<400> 121
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atctcctgca ggtctagtca aagcctccta tacagtgatg gaaataccta cttgacttgg 120

tttcagcaga ggccaggcca atctccaagg cgcctaattt ataaggtttc taaccgggac 180

tctggggtcc cagacagatt cagcggcagt gggtcaggca ctgatttcac actgacaatc 240

agcagggtgg aggctgagga tgttgggatt tattactgca tgcaaggcac acactggccg 300

tggacgtttg gccaagggac caaggtggaa atcaaa 336

<210> 122
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 122

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Tyr Ser
20 25 30

Asp Gly Asn Thr Tyr Leu Thr Trp Phe Gln Gln Arg Pro Gly Gln Ser
35 40 45

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

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

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

Thr His Trp Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 123
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 123
caaagcctcc tatacagtga tggaaatacc tac 33

<210> 124
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 124

Gln Ser Leu Leu Tyr Ser Asp Gly Asn Thr Tyr
1 5 10

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

<220>
<223> synthetic

<400> 125
aaggtttct 9

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

<220>
<223> synthetic

<400> 126

Lys Val Ser
1

<210> 127
<211> 27
<212> DNA
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<220>
<223> synthetic

<400> 127
atgcaaggca cacactggcc gtggacg 27

<210> 128
<211> 9
<212> PRT
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<220>
<223> synthetic

<400> 128

Met Gln Gly Thr His Trp Pro Trp Thr
1 5

<210> 129
<211> 369
<212> DNA
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<220>
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<400> 129
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tcctgtgaag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtt atatggtaca gtgaaagtaa taaatactat 180

acagactcca tgaagggccg actcaccatc tccagagaca attccaagaa cacgctgtat 240

ttgcaaatga acagcctgag agccgaggac acggctgtgt attattgtgc gagaggggg 300

ctcctgggga agtactacta ctacggtatg gacgtctggg gccaagggac cacggtcacc 360

gtctcctca 369

<210> 130
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
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<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 Glu Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

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

Ala Val Ile Trp Tyr Ser Glu Ser Asn Lys Tyr Tyr Thr Asp Ser Met
50 55 60

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

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

Ala Arg Gly Gly Leu Leu Gly Lys Tyr Tyr Tyr Tyr Gly Met Asp Val
100 105 110

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

<210> 131
<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 131
ggattcacct tcagtagcta tggc 24

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

<220>
<223> synthetic

<400> 132

Gly Phe Thr Phe Ser Ser Tyr Gly
1 5

<210> 133
<211> 24
<212> DNA
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<400> 133
atatggtaca gtgaaagtaa taaa 24

<210> 134
<211> 8
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<220>
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<400> 134

Ile Trp Tyr Ser Glu Ser Asn Lys
1 5

<210> 135
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
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<400> 135
gcgagagggg ggctcctggg gaagtactac tactacggta tggacgtc 48

<210> 136
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 136

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

<210> 137
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
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<400> 137
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atcacttgcc gggcaagtca ggacattaga aatgatttag gctggtatca gcagaaacca 120

gggaaagccc ctaagcgcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180

aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240

gaagattttg caacttttta ctgtctacag cttaatagtt acccgtacac ttttggccag 300

gggaccaagc tggagatcaa a 321

<210> 138
<211> 107

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 138

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

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

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

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

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

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

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

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

<220>
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<400> 139
caggacatta gaaatgat 18

<210> 140
<211> 6

<212> PRT
<213> Artificial Sequence

<220>
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<400> 140

Gln Asp Ile Arg Asn Asp
1 5

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

<220>
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<400> 141
gctgcatcc 9

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

<220>
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<400> 142

Ala Ala Ser
1

<210> 143
<211> 27
<212> DNA
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<220>
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<400> 143
ctacagctta atagttaccc gtacact 27

<210> 144
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<212> PRT
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<220>
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<400> 144

Leu Gln Leu Asn Ser Tyr Pro Tyr Thr
1 5

<210> 145
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<400> 145
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tcctgtgcag cgtctggatt caccttcagt gactatggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcggtt atttggtatg ctggaagtaa taaatattat 180

gcagactctg tgaaggaccg atttaccatc tccagagaca attccaagaa cacgctgtat 240

ctgcagatgc gcagcctgag agtcgaggac acggctgtat attactgtgc gagagggggg 300

gaattgcgtc ttgactacta ctccggtttg gacgtctggg gccaagggac cacggtcacc 360

gtctcctca 369

<210> 146
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 146

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

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

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

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

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

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

Ala Arg Gly Gly Glu Leu Arg Leu Asp Tyr Tyr Ser Gly Leu Asp Val
            100                 105                 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
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<210> 147
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 147
ggattcacct tcagtgacta tggc 24

<210> 148
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 148

Gly Phe Thr Phe Ser Asp Tyr Gly
1 5

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

<220>
<223> synthetic

<400> 149
atttggtatg ctggaagtaa taaa 24

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

<220>
<223> synthetic

<400> 150

Ile Trp Tyr Ala Gly Ser Asn Lys
1 5

<210> 151
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 151
gcgagagggg gggaattgcg tcttgactac tactccggtt tggacgtc 48

<210> 152
<211> 16
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 152

Ala Arg Gly Gly Glu Leu Arg Leu Asp Tyr Tyr Ser Gly Leu Asp Val
1 5 10 15

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

<220>
<223> synthetic

<400> 153
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

gtcacttgcc gggcaagtca gggcattaga agtgatttag gctggtatca gcagaaacca 120

ggaaaagccc ctaagcgcct gatctatgct gcatccagtt tccaaagtgg ggtcccatca 180

aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcaccct 240

gaagattttg ctacttatta ctgtctacag tctaataatt acccgtggac gttcggccaa 300

gggaccaagg tggaaatcaa a 321

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

<220>
<223> synthetic

<400> 154

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

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

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

Tyr Ala Ala Ser Ser Phe 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 His Pro
65   70   75   80

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

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

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

<220>
<223> synthetic

<400> 155
cagggcatta gaagtgat   18

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

<220>
<223> synthetic

<400> 156

Gln Gly Ile Arg Ser Asp
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
ctacagtcta ataattaccc gtggacg 27

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

<220>
<223> synthetic

<400> 160

Leu Gln Ser Asn Asn Tyr Pro Trp Thr
1 5

<210> 161
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
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<400> 161
caggtgcagc tggtggagtc tgggggaggc gtggtccagc cgggggggtc ccttagactc 60

tcctgtgcag tgtctggatt caccttcagt gactatggca tgcactgggt ccgccaggtt 120

ccaggcgcgg ggctggagtg ggtggcagtt atttactatg aaggaagtaa caaatactat 180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240

ctgcaaatga acagcctgag agtcgaggac acgtctatgt atttctgtgc gagaggcccc 300

cttctcggcg ggaacttcta ctcttacctt atggacgtct ggggccaggg gaccacggtc 360

accgtctcct ca 372

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

<220>
<223> synthetic

<400> 162

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

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

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

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

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

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

Ala Arg Gly Pro Leu Leu Gly Gly Asn Phe Tyr Ser Tyr Leu 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 tcagtgacta tggc 24

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

<220>
<223> synthetic

<400> 164

Gly Phe Thr Phe Ser Asp Tyr Gly
1 5

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

<220>
<223> synthetic

<400> 165
atttactatg aaggaagtaa caaa 24

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

<220>
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<400> 166

Ile Tyr Tyr Glu Gly Ser Asn Lys
1 5

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

<220>
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<400> 167
gcgagaggcc cccttctcgg cgggaacttc tactcttacc ttatggacgt c 51

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

<220>
<223> synthetic

<400> 168

Ala Arg Gly Pro Leu Leu Gly Gly Asn Phe Tyr Ser Tyr Leu Met Asp
1 5 10 15

Val

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

<220>

<223> synthetic

<400> 169
gccatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gggcattaga aatggtttag gctggtatca gcagaaacca 120

gggaaagccc ctaaactcct gatctatact gcatccagtt tacaaagtgg agtcccatca 180

agattcagcg gcagtggatc tggcacagac ttcactctca ccatcagcag cctgcagcct 240

gaagattttg caacttatta ctgtctacaa gattacaatt acccttcag tttcggccct 300

gggaccaaag tggatatcaa a 321

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

<220>
<223> synthetic

<400> 170

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 Gly Ile Arg Asn Gly
20 25 30

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

Tyr Thr Ala 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 Leu Gln Asp Tyr Asn Tyr Pro Phe
85 90 95

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

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

<220>
<223> synthetic

<400> 171
cagggcatta gaaatggt 18

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

<220>
<223> synthetic

<400> 172

Gln Gly Ile Arg Asn Gly
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
ctacaagatt acaattaccc tttcagt 27

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

<220>
<223> synthetic

<400> 176

Leu Gln Asp Tyr Asn Tyr Pro Phe Ser
1 5

<210> 177
<211> 372
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 177
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tcctgtgcag cgtctggatt taccgtcaga aactatggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtaa taaatactat 180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgttt 240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagaggggga 300

gagctggtac gtggggacta ctactacggt atggacgtct ggggccaagg gaccacggtc 360

accgtctcct ca 372

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

<220>
<223> synthetic

<400> 178

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

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

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

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

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

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

Ala Arg Gly Gly Glu Leu Val Arg Gly Asp Tyr 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
ggatttaccg tcagaaacta tggc 24

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

<220>
<223> synthetic

<400> 180

Gly Phe Thr Val Arg Asn Tyr Gly
1 5

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

<220>
<223> synthetic

<400> 181
atatggtatg atggaagtaa taaa 24

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

<220>
<223> synthetic

<400> 182

Ile Trp Tyr Asp Gly Ser Asn Lys
1 5

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

<220>
<223> synthetic

<400> 183
gcgagagggg gagagctggt acgtggggac tactactacg gtatggacgt c 51

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

<220>
<223> synthetic

<400> 184

Ala Arg Gly Gly Glu Leu Val Arg Gly Asp Tyr Tyr Tyr Gly Met Asp
1 5 10 15

Val

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

<220>
<223> synthetic

<400> 185
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120

gggaaagccc ctaagcgcct gatctatggt gcatccagtt tgcaaagtgg ggtcccatca 180

aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240

gaagattttg caacttatta ctgtctacag cataatagtt acccgtacac ttttggccag 300

gggaccaagc tggagatcaa a 321

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

<220>
<223> synthetic

<400> 186

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

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

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

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

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

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

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

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

<220>
<223> synthetic

<400> 187
cagggcatta gaaatgat 18

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

<220>
<223> synthetic

<400> 188

Gln Gly Ile Arg Asn Asp
1 5

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

<220>
<223> synthetic

<400> 189
ggtgcatcc 9

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

<220>
<223> synthetic

<400> 190

Gly Ala Ser
1

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

<220>
<223> synthetic

<400> 191
ctacagcata atagttaccc gtacact 27

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

<220>
<223> synthetic

<400> 192

Leu Gln His Asn Ser Tyr Pro Tyr Thr
1 5

<210> 193
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 193
caggtgcagc tggtggagtc tgggggcggc gtggtccagc ctgggaggtc cctgagactc 60

tcctgtgcag cctctggaac tatcttcagt acccatggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtt atatcatatg atggaaataa gaagtactat 180

gcaggctccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240

ctgcaaatga acgacgttag atctgaggac acggctgttt atcactgtac gacagatatt 300

actggaatca cggactactg gggccaggga accctggtca ccgtctcctc a 351

<210> 194
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 194

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

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

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

Ala Val Ile Ser Tyr Asp Gly Asn Lys Lys Tyr Tyr Ala Gly 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 Asp Val Arg Ser Glu Asp Thr Ala Val Tyr His Cys
                85                  90                  95

Thr Thr Asp Ile Thr Gly Ile Thr Asp Tyr Trp Gly Gln Gly Thr Leu
            100                 105                 110

Val Thr Val Ser Ser
        115
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<210> 195
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 195
ggaactatct tcagtaccca tggc 24

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

<220>

<223> synthetic

<400> 196

Gly Thr Ile Phe Ser Thr His Gly
1 5

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

<220>
<223> synthetic

<400> 197
atatcatatg atggaaataa gaag 24

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

<220>
<223> synthetic

<400> 198

Ile Ser Tyr Asp Gly Asn Lys Lys
1 5

<210> 199
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 199
acgacagata ttactggaat cacggactac 30

<210> 200
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 200

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

<210> 201
<211> 318
<212> DNA
<213> Artificial Sequence

<220>
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<400> 201
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc   60

atcacttgcc gggcaagtca gggcattgga aatgatttag gctggtatca gcagaaacta   120

gggaaggccc ctaagcgcct gatctatgct gcatccagtt tggagagtgg ggtcccatca   180

aggttcagcg gcagtggatc cgggacagaa ttcattctca caatcagcag cctgcaggct   240

gaagattttg caacttacta ctgtctacag cataatggtt tcccgacgtt cggccaaggg   300

accaaggtgg aaatcaaa   318

<210> 202
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
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<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 Gly Ile Gly Asn Asp
            20   25   30

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

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

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

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

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

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

<220>
<223> synthetic

<400> 203
cagggcattg gaaatgat 18

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

<220>
<223> synthetic

<400> 204

Gln Gly Ile Gly Asn Asp
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> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 207
ctacagcata atggtttccc gacg 24

<210> 208
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 208

Leu Gln His Asn Gly Phe Pro Thr
1 5

<210> 209
<211> 363

<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 209
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tcctgtgcag cgtctggatt caccttcagt aactatggca ttcactgggt ccgccagcct 120

ccaggccagg gcctggagtg ggtggcagtt atatggtatg ctggaagtaa taagttttat 180

gcagattccg tgaagggccg attcaccatc tccagagaca attccaagaa ctcggcgtat 240

ctgcaaatga acagcctgag agccgaggat acggctgtgt attactgtgc gagagccccc 300

ctgggttatt actactacgg tatggacgtc tggggccaag ggaccacggt caccgtctcc 360

tca 363

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

<220>
<223> synthetic

<400> 210

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

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

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

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

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

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

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

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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

<220>
<223> synthetic

<400> 211
ggattcacct tcagtaacta tggc 24

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

<220>
<223> synthetic

<400> 212

Gly Phe Thr Phe Ser Asn Tyr Gly
1 5

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

<220>
<223> synthetic

<400> 213
atatggtatg ctggaagtaa taag 24

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

<220>
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<400> 214

Ile Trp Tyr Ala Gly Ser Asn Lys
1 5

<210> 215
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
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<400> 215
gcgagagccc ccctgggtta ttactactac ggtatggacg tc 42

<210> 216
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 216

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

<210> 217
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 217
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120

gggaaagccc ctaagcgcct gatctatgat gcatccagtt tggaaagtgg ggtcccatca 180

aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240

gaagattttg caacttatta ctgtctacag cataatagtt acccgtggac gttcggccaa 300

gggaccaagg tggaaatcaa a 321

<210> 218
<211> 107
<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 Gly Ile Arg Asn Asp
20 25 30

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

Tyr Asp 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

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

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

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

<220>
<223> synthetic

<400> 219
cagggcatta gaaatgat 18

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

<220>
<223> synthetic

<400> 220

Gln Gly Ile Arg Asn Asp
1 5

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

<220>
<223> synthetic

<400> 221
gatgcatcc 9

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

<220>
<223> synthetic

<400> 222

Asp Ala Ser
1

<210> 223
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 223
ctacagcata atagttaccc gtggacg 27

<210> 224
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 224

Leu Gln His Asn Ser Tyr Pro Trp Thr
1 5

<210> 225
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 225
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60

tcctgtgcag cgtctggact caccgtcagt agttatgtca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcaatt atatggtatg atggaagtaa taaatactat 180

ggagactccg tgaagggccg attcaccatc tccagagaca attccaagaa aacgctgtat 240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagaggccgc 300

cccctgtcta gtagttcgtc cgattattac ggtttggacg tctggggcca agggaccacg 360

gtcaccgtct cctca 375

<210> 226
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 226

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 Leu Thr Val Ser Ser Tyr
20 25 30

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

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

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

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

Ala Arg Gly Arg Pro Leu Ser Ser Ser Ser Ser Asp Tyr Tyr Gly Leu
100 105 110

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

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<210> 228
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<220>
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<400> 228

Gly Leu Thr Val Ser Ser Tyr Val
1 5

<210> 229
<211> 24
<212> DNA
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<220>
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atatggtatg atggaagtaa taaa 24

<210> 230
<211> 8
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<220>
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<400> 230

Ile Trp Tyr Asp Gly Ser Asn Lys
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<210> 231
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<212> DNA
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<400> 231
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<210> 232
<211> 18
<212> PRT
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<400> 232

Ala Arg Gly Arg Pro Leu Ser Ser Ser Ser Ser Asp Tyr Tyr Gly Leu
1 5 10 15

Asp Val

<210> 233
<211> 321
<212> DNA
<213> Artificial Sequence

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<400> 233
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atcatttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 120

gggaaagccc ctaacctcct gatctatgct gcatccagtt tacaaagtgg ggtcccatca 180

aggttcagcg gcagtggatc tggcacagat ttcactctca ccatcagcag cctgcagcct 240

gaagattttg caacttatta ctgtctacaa gattacaatt atccgtggac gttcggccaa 300

gggaccaagg tggaaatcaa a 321

<210> 234
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
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<400> 234

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

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

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

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

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

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

<210> 235
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<212> DNA
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<220>
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<400> 235
cagggcatta gaaatgat 18

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

<220>
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<400> 236

Gln Gly Ile Arg Asn Asp
1 5

<210> 237
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
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<400> 237
gctgcatcc 9

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

<220>
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<400> 238

Ala Ala Ser
1

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

<220>
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<400> 239
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<210> 240
<211> 9
<212> PRT
<213> Artificial Sequence

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<400> 240

Leu Gln Asp Tyr Asn Tyr Pro Trp Thr
1 5

<210> 241
<211> 360
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<220>
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<400> 241
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tcctgtgcag cctctggatt caccttcagt aattatgaaa tgtattgggt ccgccaggct 120

ccagggaagg ggctggaatg ggtttcatac attagtagta gtggtactac catatactac 180

gcagactctg tgaagggccg attcagtgtc tccagagaaa acgccaggag ctcactgtat 240

ctgcaaatga acagtctgag agtcgaggac tcggctgttt acttctgtgc gaagtataac 300

tggaactcct tctatggttt ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

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

<220>
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<400> 242

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

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

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

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

Lys Gly Arg Phe Ser Val Ser Arg Glu Asn Ala Arg Ser Ser Leu Tyr
65 70 75 80

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

Ala Lys Tyr Asn Trp Asn Ser Phe Tyr Gly Leu Asp Val Trp Gly Gln
100 105 110

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 243
<211> 24
<212> DNA
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<220>
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<400> 243
ggattcacct tcagtaatta tgaa 24

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

<220>
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<400> 244

Gly Phe Thr Phe Ser Asn Tyr Glu
1 5

<210> 245
<211> 24
<212> DNA
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<220>
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<400> 245
attagtagta gtggtactac cata 24

<210> 246
<211> 8
<212> PRT
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<220>
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<400> 246

Ile Ser Ser Ser Gly Thr Thr Ile
1 5

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

<220>
<223> synthetic

<400> 247
gcgaagtata actggaactc cttctatggt ttggacgtc 39

<210> 248
<211> 13
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<220>

<223> synthetic

<400> 248

Ala Lys Tyr Asn Trp Asn Ser Phe Tyr Gly Leu Asp Val
1 5 10

<210> 249
<211> 321
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<400> 249
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atcacttgcc gggcaagtca ggacattaga aatgatttag gctggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatctctgct gcatccagtt tacagggtgg ggtcccatca 180

aggttcagcg gcagtggatc tggcacagat ttcactctca ccattagcag cctgcagcct 240

gcagattttg caacttatta ctgtctacaa gagtacaatt atgcactcac tttcggcgga 300

gggaccaagg tggagatcaa a 321

<210> 250
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
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<400> 250

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 Asp Ile Arg Asn Asp
20 25 30

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

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

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

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

Thr 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
caggacatta gaaatgat 18

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

<220>
<223> synthetic

<400> 252

Gln Asp Ile Arg Asn Asp
1 5

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

<220>

<223> synthetic

<400> 253
gctgcatcc 9

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

<220>
<223> synthetic

<400> 254

Ala Ala Ser
1

<210> 255
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 255
ctacaagagt acaattatgc actcact 27

<210> 256
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 256

Leu Gln Glu Tyr Asn Tyr Ala Leu Thr
1 5

<210> 257
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 257
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tcctgtgcag cctctggatt caccttcagg gtttatgaaa tgaactgggt ccgccaggct 120

ccagggaagg ggctggagtg gatttcatac attggcagta gtggttttac catatactac 180

gcagactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgttt 240

ctgcagctga acagcctgag agccgaggac acggctgttt attactgtgc gagagggtgg 300

aacgacggag ttcctaacta tttgggtatg gacgtctggg gccaaggcac cacggtcacc 360

gtctcctca 369

<210> 258
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 258

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 Arg Val Tyr
            20   25   30

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

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

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

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

Ala Arg Gly Trp Asn Asp Gly Val Pro Asn Tyr Leu Gly Met Asp Val
100 105 110

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

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

<220>
<223> synthetic

<400> 259
ggattcacct tcagggttta tgaa 24

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

<220>
<223> synthetic

<400> 260

Gly Phe Thr Phe Arg Val Tyr Glu
1 5

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

<220>
<223> synthetic

<400> 261
attggcagta gtggttttac cata 24

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

<220>
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<400> 262

Ile Gly Ser Ser Gly Phe Thr Ile
1 5

<210> 263
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 263
gcgagagggt ggaacgacgg agttcctaac tatttgggta tggacgtc 48

<210> 264
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 264

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

<210> 265
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
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<400> 265
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atcacttgcc aggcgagtca ggacattaac aaatatttaa attggtatca gcagaaacca 120

ggaaaagccc ctaaactcct gatctacgat gcatccaatt tggaaacagg ggtcccatca 180

aggttcagtg gaagtggatc tgggacagat tttactttca ccatcagcag cctgcagcct 240

gaagatattg caagatatca ctgtcaacag tatgataaaa tcccgctcac tttcggcgga 300

gggaccaagg tggagatcaa a 321

<210> 266
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 266

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 Gln Ala Ser Gln Asp Ile Asn Lys Tyr
20 25 30

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

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

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

Glu Asp Ile Ala Arg Tyr His Cys Gln Gln Tyr Asp Lys Ile Pro Leu
85 90 95

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

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

<220>
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<400> 267
caggacatta acaaatat 18

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

<220>
<223> synthetic

<400> 268

Gln Asp Ile Asn Lys Tyr
1 5

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

<220>
<223> synthetic

<400> 269
gatgcatcc 9

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

<220>
<223> synthetic

<400> 270

Asp Ala Ser
1

<210> 271
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
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<400> 271
caacagtatg ataaaatccc gctcact 27

<210> 272
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 272

Gln Gln Tyr Asp Lys Ile Pro Leu Thr
1 5

<210> 273
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
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<400> 273
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60

tcctgtgcag cgtctggatt caccttcagc agctatggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtt atctggtatg ttggaagtaa taaatactat 180

ggagagtccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240

ttgcaaatga acagcctgag agacgaggac acggctatat attactgtgc gagagggggt 300

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gtctcctca 369

<210> 274
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 274

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

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

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

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

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

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

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

<220>

<223> synthetic

<400> 275
ggattcacct tcagcagcta tggc 24

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

<220>
<223> synthetic

<400> 276

Gly Phe Thr Phe Ser Ser Tyr Gly
1 5

<210> 277
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 277
atctggtatg ttggaagtaa taaa 24

<210> 278
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 278

Ile Trp Tyr Val Gly Ser Asn Lys
1 5

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

<220>
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<400> 279
gcgagagggg gtcaactggg ctccttctac tattacggta tggacgtc   48

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

<220>
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<400> 280

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

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

<220>
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<400> 281
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc   60

atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca   120

gggaaagccc ctaagcgcct gatctatgat gtatccagtt tacaaagtgg ggtcccatca   180

aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct   240

gaagatcttg caacttatta ctgtctacag cataatagtt acccgtggac gttcggccaa   300

gggaccaagg tggaaatcaa a   321

<210> 282
<211> 107
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 282

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

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

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

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

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

Glu Asp Leu Ala Thr Tyr Tyr Cys Leu Gln His 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>
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<400> 283
cagggcatta gaaatgat 18

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

<220>

<223> synthetic

<400> 284

Gln Gly Ile Arg Asn Asp
1 5

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

<220>
<223> synthetic

<400> 285
gatgtatcc 9

<210> 286
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
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<400> 286

Asp Val Ser
1

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

<220>
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<400> 287
ctacagcata atagttaccc gtggacg 27

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

<220>
<223> synthetic

<400> 288

Leu Gln His Asn Ser Tyr Pro Trp Thr
1   5

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

<220>
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<400> 289
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tcctgtgcag cgtcaggatt caccttcaat aactatggct tccactgggt ccgccaggct   120

ccaggcaggg ggctggagtg ggtggcagtt atttggtatt ctggaagtaa taaatactat   180

ggagactccg tgaagggccg attcaccatc tccagagaca attccaaaaa tatattgtat   240

ctgcaaatga acagtctgag agccgaggac acggctatat attactgtgc gagatttccg   300

tttagcagca gttggctctt ggactactgg ggccagggaa ccctggtcac cgtctcctca   360

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

<220>
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<400> 290

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

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

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


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


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


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


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


Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210>  291
<211>  24
<212>  DNA
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<220>
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<400>  291
ggattcacct tcaataacta tggc                                              24


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

<220>
<223>  synthetic

<400>  292

Gly Phe Thr Phe Asn Asn Tyr Gly
1               5
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<210> 293
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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<400> 293
atttggtatt ctggaagtaa taaa 24

<210> 294
<211> 8
<212> PRT
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<220>
<223> synthetic

<400> 294

Ile Trp Tyr Ser Gly Ser Asn Lys
1 5

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

<220>
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<400> 295
gcgagatttc cgtttagcag cagttggctc ttggactac 39

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

<220>
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<400> 296

Ala Arg Phe Pro Phe Ser Ser Ser Trp Leu Leu Asp Tyr
1 5 10

<210> 297
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 297
gacatccagt tgacccagtc tccatccttc ctgtctgcat ctgtaggaga cagagtcacc 60

ttcacttgct gggccagtca gggcattagt gattatttag cctggtatca acaaaaacca 120

gggaaagccc ctaaactcct gatctatgct gcatccgctt tgcaaagtgg ggtcccatca 180

aggttcagcg gcagtggatc tgggacagaa ttcactctca cagtcagcag cctacagcct 240

gaagattttg caacttatta ctgtcaacag cttaatagtt atccattcac tttcggccct 300

gggaccaaag tggatatcaa a 321

<210> 298
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
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<400> 298

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

Asp Arg Val Thr Phe Thr Cys Trp Ala Ser Gln Gly Ile Ser Asp Tyr
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 Ala Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

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

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

<210> 299
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
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<400> 299
cagggcatta gtgattat 18

<210> 300
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 300

Gln Gly Ile Ser Asp Tyr
1 5

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

<220>
<223> synthetic

<400> 301
gctgcatcc 9

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

<220>
<223> synthetic

<400> 302

Ala Ala Ser
1

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

<220>
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<400> 303
caacagctta atagttatcc attcact 27

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

<220>
<223> synthetic

<400> 304

Gln Gln Leu Asn Ser Tyr Pro Phe Thr
1 5

<210> 305
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 305
cagctgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60

acctgcactg tctctggtgg ctccatcagc agtactaatc actactgggg ctggatccgc 120

cagcccccag ggaagggcct ggagtggatc ggtaatgtct attatattgg gaacgcctac 180

tacaacccgt ccctcaagac tggagtcacc ttttccgtag acacgtccaa gaaccagttc 240

tccctgaacc tgaggtctgt gaccgccgca gacacggcta tgtattactg tgcgagactt 300

tctaactgga atttcttgga cttgtggggc cagggaaccc tggtcaccgt ctcctca 357

<210> 306
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 306

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

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

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

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

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

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

Cys Ala Arg Leu Ser Asn Trp Asn Phe Leu Asp Leu Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
        115

<210> 307
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 307
ggtggctcca tcagcagtac taatcactac   30

<210> 308
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 308

Gly Gly Ser Ile Ser Ser Thr Asn His Tyr
1   5   10

<210> 309
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 309
gtctattata ttgggaacgc c   21

<210> 310
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 310

Val Tyr Tyr Ile Gly Asn Ala
1 5

<210> 311
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 311
gcgagacttt ctaactggaa tttcttggac ttg 33

<210> 312
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 312

Ala Arg Leu Ser Asn Trp Asn Phe Leu Asp Leu
1 5 10

<210> 313
<211> 318
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 313
gaaattgtga tgacgcagtc tccagccacc ctgtctgtgt ctccagggga aagagccacc 60

ctctcctgca gggccagtca gagtattagc agcaacttag cctggtacca gcagaaacct 120

ggccaggctc ccaggctcct catctatggt gcatccacca gggccactgg tatcccagcc 180

aggttcagtg gcagtgggtc tgggacagag ttcactctca ccatcagcag cctgcagtct 240

gaagattttg cagtttatta ctgtcagcaa tttaataact ggctctcttt cggcggaggg 300

accaaggtgg agatcaaa 318

<210> 314
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 314

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

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

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

Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
50 55 60

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

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Phe Asn Asn Trp Leu Ser
85 90 95

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

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

<220>
<223> synthetic

<400> 315
cagagtatta gcagcaac 18

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

<220>
<223> synthetic

<400> 316

Gln Ser Ile Ser Ser Asn
1 5

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

<220>
<223> synthetic

<400> 317
ggtgcatcc 9

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

<220>
<223> synthetic

<400> 318

Gly Ala Ser
1

<210> 319
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic

<400> 319
cagcaattta ataactggct ctct 24

<210> 320
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 320

Gln Gln Phe Asn Asn Trp Leu Ser
1 5

<210> 321
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 321
caggtgcagc tggtggagtc gggggggggc gtggtccagc ctgggaggtc cctgagactc 60

tcctgtgcag cgtctggatt caccttcagt acctatggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtt atatggtatg ttggaagtaa taaattctat 180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240

ctgcaaatgg acagcctgag agccgaggac acgggtgtgt atcactgtgc gagagacagt 300

atggttcggc cctattatta cggtatggac gtctggggcc aagggaccac ggtcaccgtc 360

tcctca 366

<210> 322
<211> 122
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 322

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

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

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

Ala Val Ile Trp Tyr Val Gly Ser Asn Lys Phe 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 Asp Ser Leu Arg Ala Glu Asp Thr Gly Val Tyr His Cys
85 90 95

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

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

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

<220>
<223> synthetic

<400> 323
ggattcacct tcagtaccta tggc 24

<210> 324
<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 324

Gly Phe Thr Phe Ser Thr Tyr Gly
1 5

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

<220>
<223> synthetic

<400> 325
atatggtatg ttggaagtaa taaa 24

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

<220>
<223> synthetic

<400> 326

Ile Trp Tyr Val Gly Ser Asn Lys
1 5

<210> 327
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 327
gcgagagaca gtatggttcg gccctattat tacggtatgg acgtc 45

<210> 328
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 328

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

<210> 329
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 329
caggtgcagc tggtggagtc tgggggaggc gtggtccaac ctgggaggtc cctgagactc 60

tcctgttcag cgtctggatt caccctcagt aattttgtca tgcattgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtc atattatatg atggaagtaa taaatattat 180

gcggactccg tgaagggccg attcaccatc tccagagaca attccaacaa caggctgtat 240

ctgcaaatga acagcctgag agccgaggac acggctcttt attactgtgc gagaggagag 300

tccttgggat cacctatcta ttattactac ggtttggacg tctggggcca agggaccacg 360

gtcaccgtct cctca 375

<210> 330
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 330

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 Ser Ala Ser Gly Phe Thr Leu Ser Asn Phe
            20                  25                  30

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

Ala Val Ile Leu 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 Asn Asn Arg Leu Tyr
65                  70                  75                  80

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

Ala Arg Gly Glu Ser Leu Gly Ser Pro Ile Tyr Tyr Tyr Tyr Gly Leu
            100                 105                 110

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


<210>  331
<211>  24
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  synthetic

<400>  331
ggattcaccc tcagtaattt tgtc                                              24


<210>  332
<211>  8
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  synthetic
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<400> 332

Gly Phe Thr Leu Ser Asn Phe Val
1 5

<210> 333
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 333
atattatatg atggaagtaa taaa 24

<210> 334
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 334

Ile Leu Tyr Asp Gly Ser Asn Lys
1 5

<210> 335
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 335
gcgagaggag agtccttggg atcacctatc tattattact acggtttgga cgtc 54

<210> 336
<211> 18
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 336

Ala Arg Gly Glu Ser Leu Gly Ser Pro Ile Tyr Tyr Tyr Tyr Gly Leu
1 5 10 15

Asp Val

<210> 337
<211> 360
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 337
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60

acctgcattg tctctggtgg ctccatcagt ggttacttct ggaactggat ccggcagccc 120

ccagggaagg gacttgaatg gattggttat atctattaca gtgggaccac catctacaac 180

ccctccctca agagtcgatt caccatatca ctagacacgt ccaagaacca gttctcccta 240

aagctgacct ctgtgaccgc tgcggacacg gccgtatatt actgtgcgag agagtcgtat 300

aatccctcgc cgcgatattt tgaccactgg ggccagggaa ccctggtcac cgtctcctca 360

<210> 338
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 338

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 Ile Val Ser Gly Gly Ser Ile Ser Gly Tyr
20 25 30

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

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

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

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

Arg Glu Ser Tyr Asn Pro Ser Pro Arg Tyr Phe Asp His Trp Gly Gln
            100                 105                 110

Gly Thr Leu Val Thr Val Ser Ser
        115                 120


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

<220>
<223>  synthetic

<400>  339
ggtggctcca tcagtggtta cttc                                          24


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

<220>
<223>  synthetic

<400>  340

Gly Gly Ser Ile Ser Gly Tyr Phe
1               5
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<210> 341
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 341
atctattaca gtgggaccac c 21

<210> 342
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 342

Ile Tyr Tyr Ser Gly Thr Thr
1 5

<210> 343
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 343
gcgagagagt cgtataatcc ctcgccgcga tattttgacc ac 42

<210> 344
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 344

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Ala Arg Glu Ser Tyr Asn Pro Ser Pro Arg Tyr Phe Asp His
1               5                   10


<210>  345
<211>  375
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  synthetic

<400>  345
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc       60

tcctgtgcag cgtctggatt cagcttcagt agttatggca tgcactgggt ccgccaggct      120

ccaggcaagg ggctggagtg gatggcagtt atatggtatg ctggaagtaa taaattctat      180

gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat      240

ctgcaaatga acagcctgac agccgaggac acggctgtat attactgtgc gagagggtcg      300

agtctagcag ctccagacct ctacaagtac ggaatggacg tctggggcca ggggaccacg      360

gtcaccgtct cctca                                                       375


<210>  346
<211>  125
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  synthetic

<400>  346

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 Ser Tyr
            20                  25                  30


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

```
Ala Val Ile Trp Tyr Ala Gly Ser Asn Lys Phe 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 Gly Ser Ser Leu Ala Ala Pro Asp Leu Tyr Lys Tyr Gly Met
            100                 105                 110


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


<210>  347
<211>  24
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  synthetic

<400>  347
ggattcagct tcagtagtta tggc                                              24


<210>  348
<211>  8
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  synthetic

<400>  348

Gly Phe Ser Phe Ser Ser Tyr Gly
1               5


<210>  349
<211>  24
<212>  DNA
<213>  Artificial Sequence
```

<220>
<223> synthetic

<400> 349
atatggtatg ctggaagtaa taaa   24

<210> 350
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 350

Ile Trp Tyr Ala Gly Ser Asn Lys
1   5

<210> 351
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 351
gcgagagggt cgagtctagc agctccagac ctctacaagt acggaatgga cgtc   54

<210> 352
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 352

Ala Arg Gly Ser Ser Leu Ala Ala Pro Asp Leu Tyr Lys Tyr Gly Met
1   5   10   15

Asp Val

<210> 353
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 353
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60

acctgtacta tctctggtgg ctccatcagt aattccttct tgacctggat ccgacagccc 120

ccagggaagg gactggagtg gattggatat atctatcacc ggggaaacac tgattccaat 180

ccctccctca agagtcgagt caccatctca acagacccgt ccaagaatca gttctccctg 240

accctgcact ctgtgaccgc cgcagactcg gccatatatt actgtgcgcg gggacaattt 300

atggagtggt ttgacttctg gggccaggga accctggtca ccgtctcctc a 351

<210> 354
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 354

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 Ile Ser Gly Gly Ser Ile Ser Asn Ser
20 25 30

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

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

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

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

Arg Gly Gln Phe Met Glu Trp Phe Asp Phe Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser
115

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

<220>
<223> synthetic

<400> 355
ggtggctcca tcagtaattc cttc 24

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

<220>
<223> synthetic

<400> 356

Gly Gly Ser Ile Ser Asn Ser Phe
1 5

<210> 357
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 357
atctatcacc ggggaaacac t 21

<210> 358
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 358

Ile Tyr His Arg Gly Asn Thr
1 5

<210> 359
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 359
gcgcggggac aatttatgga gtggtttgac ttc 33

<210> 360
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 360

Ala Arg Gly Gln Phe Met Glu Trp Phe Asp Phe
1 5 10

<210> 361
<211> 375
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic

<400> 361
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagagtc 60

tcctgtgaag cgtctggatt caccctcagt agttatggca tgaactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtaa taaatactat 180

tcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240

ctgcaaatga acggcctgag agacgatgac acggctgtgt attactgtgc gagaggggag 300

cagctcggct ctcatgtcta ttattactat ggaatggacg tctggggcca agggaccacg 360

gtcaccgtct cctca 375

<210> 362
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 362

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

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

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

Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ser 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 Gly Leu Arg Asp Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly Glu Gln Leu Gly Ser His Val Tyr Tyr Tyr Tyr Gly Met
100 105 110

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

<210> 363
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 363
ggattcaccc tcagtagtta tggc 24

<210> 364
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 364

Gly Phe Thr Leu Ser Ser Tyr Gly
1 5

<210> 365
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 365
atatggtatg atggaagtaa taaa 24

<210> 366
<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 366

Ile Trp Tyr Asp Gly Ser Asn Lys
1 5

<210> 367
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 367
gcgagagggg agcagctcgg ctctcatgtc tattattact atggaatgga cgtc 54

<210> 368
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 368

Ala Arg Gly Glu Gln Leu Gly Ser His Val Tyr Tyr Tyr Tyr Gly Met
1 5 10 15

Asp Val

<210> 369
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 369
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaagtc cctgagactc 60

tcctgtgcag cgtctggatt caccttcagt aactatgtca tgcactgggt ccgccagact 120

ccaggcaagg ggctggagtg ggtggcgatt attttatttc ctggaagtaa taaatactat 180

gtagactccg tgcagggccg attcaccatc tccagagaca attccaagaa cacgctgtct 240

ctgcaaatga acagcctgag agccgaagac acggctgtat attactgtgc gaggggctcg 300

agtttgacag ctcttgacta ctactactac ggtctggacg tctggggcca agggaccacg 360

gtcaccgtct cctca 375

<210> 370
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 370

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

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

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

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

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

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

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

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

<210> 371
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 371
ggattcacct tcagtaacta tgtc 24

<210> 372
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 372

Gly Phe Thr Phe Ser Asn Tyr Val
1 5

<210> 373
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 373
attttatttc ctggaagtaa taaa 24

<210> 374
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 374

Ile Leu Phe Pro Gly Ser Asn Lys
1   5

<210> 375
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 375
gcgaggggct cgagtttgac agctcttgac tactactact acggtctgga cgtc   54

<210> 376
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 376

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

Asp Val

<210> 377
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 377
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc   60

tcctgtgcag cgtctggatt caccttcagt aactatgtca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcaatt atatggtatg atggaactaa tgaagactat 180

gcagactccg tgaaggtccg attcaccatc tccagagaca tttccaagaa cacgctgtat 240

ctgcaaatga acagcctgag agccgaggac acggctgtat attactgtgc gagagattgg 300

tttgattgta gtagtaccag ctgctatagg tacttcgatc tctggggccg tggcaccctg 360

gtcactgtct cctca 375

<210> 378
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 378

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

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

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

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

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

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

Ala Arg Asp Trp Phe Asp Cys Ser Ser Thr Ser Cys Tyr Arg Tyr Phe
100 105 110

Asp Leu Trp Gly Arg Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 379
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 379
ggattcacct tcagtaacta tgtc 24

<210> 380
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 380

Gly Phe Thr Phe Ser Asn Tyr Val
1 5

<210> 381
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 381
atatggtatg atggaactaa tgaa 24

<210> 382
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 382

Ile Trp Tyr Asp Gly Thr Asn Glu
1 5

<210> 383
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 383
gcgagagatt ggtttgattg tagtagtacc agctgctata ggtacttcga tctc 54

<210> 384
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 384

Ala Arg Asp Trp Phe Asp Cys Ser Ser Thr Ser Cys Tyr Arg Tyr Phe
1 5 10 15

Asp Leu

<210> 385
<211> 375
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 385
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60

tcctgtgcag cgtctggatt caccttcagt aataataaca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtaa taaagattat 180

gtagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240

ctgcaaatga acagtttgag agccgaggat acggctgtgt attattgtgc gagatttgta 300

gtagcgccag ctacgtactc ctactactac attatagacg tctggggcca agggaccacg 360

gtcaccgtct cctca 375

<210> 386
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 386

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

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

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

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

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

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

Ala Arg Phe Val Val Ala Pro Ala Thr Tyr Ser Tyr Tyr Tyr Ile Ile
100 105 110

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

<210> 387
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 387
ggattcacct tcagtaataa taac 24

<210> 388
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 388

Gly Phe Thr Phe Ser Asn Asn Asn
1 5

<210> 389
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 389
atatggtatg atggaagtaa taaa 24

<210> 390
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 390

Ile Trp Tyr Asp Gly Ser Asn Lys
1 5

<210> 391
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 391
gcgagatttg tagtagcgcc agctacgtac tcctactact acattataga cgtc 54

<210> 392
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 392

Ala Arg Phe Val Val Ala Pro Ala Thr Tyr Ser Tyr Tyr Tyr Ile Ile
1 5 10 15

Asp Val

<210> 393
<211> 378
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 393
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60

tcctgtgcag cctctggatt taccttcagt acctatggca tgcactgggt ccgccaggct 120

ccaggcaagg ggctggagtg ggtggcagtt atttcatatg atggaagaat taaatactat 180

gaagactccg tgaagggccg attcatcata tccagagaca actccaagaa cacactgtat 240

ctgcaagtga acaccctgag agctgaggac acggctgtgt attactgtgc gaaagagagg 300

agatattgta gtgatactaa tacctgctct gatgtttttg atgtctgggg ccaggggaca 360

atggtcaccg tctcttca 378

<210> 394
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 394

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

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

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

Ala Val Ile Ser Tyr Asp Gly Arg Ile Lys Tyr Tyr Glu Asp Ser Val
50 55 60

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

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

Ala Lys Glu Arg Arg Tyr Cys Ser Asp Thr Asn Thr Cys Ser Asp Val
100 105 110

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

<210> 395
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 395
ggatttacct tcagtaccta tggc 24

<210> 396
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 396

Gly Phe Thr Phe Ser Thr Tyr Gly
1 5

<210> 397
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 397
atttcatatg atggaagaat taaa 24

<210> 398
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 398

Ile Ser Tyr Asp Gly Arg Ile Lys
1 5

<210> 399
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 399
gcgaaagaga ggagatattg tagtgatact aatacctgct ctgatgtttt tgatgtc 57

<210> 400
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 400

Ala Lys Glu Arg Arg Tyr Cys Ser Asp Thr Asn Thr Cys Ser Asp Val
1 5 10 15

Phe Asp Val

<210> 401
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 401
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcaagtca gagcattagc agctatttaa attggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccgtca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcaacag agttacagta cccctccgat caccttcggc 300

caagggacac gactggagat taaa 324

<210> 402
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 402

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 Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Pro
85 90 95

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

<210> 403
<211> 18
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic

<400> 403
cagagcatta gcagctat 18

<210> 404
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 404

Gln Ser Ile Ser Ser Tyr
1 5

<210> 405
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 405
gctgcatcc 9

<210> 406
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 406

Ala Ala Ser
1

<210> 407
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic

<400> 407
caacagagtt acagtacccc tccgatcacc   30

<210> 408
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 408

Gln Gln Ser Tyr Ser Thr Pro Pro Ile Thr
1   5   10

<210> 409
<211> 194
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 409

Met His Arg Pro Arg Arg Arg Gly Thr Arg Pro Pro Pro Leu Ala Leu
1   5   10   15

Leu Ala Ala Leu Leu Leu Ala Ala Arg Gly Ala Asp Ala Gln Arg Pro
            20   25   30

Thr Gly Gly Pro Gly Cys Gly Pro Gly Arg Leu Leu Leu Gly Thr Gly
        35   40   45

Thr Asp Ala Arg Cys Cys Arg Val His Thr Thr Arg Cys Cys Arg Asp
    50   55   60

Tyr Pro Gly Glu Glu Cys Cys Ser Glu Trp Asp Cys Met Cys Val Gln
65   70   75   80

```
Pro Glu Phe His Cys Gly Asp Pro Cys Cys Thr Thr Cys Arg His His
                85                  90                  95


Pro Cys Pro Pro Gly Gln Gly Val Gln Ser Gln Gly Lys Phe Ser Phe
            100                 105                 110


Gly Phe Gln Cys Ile Asp Cys Ala Ser Gly Thr Phe Ser Gly Gly His
        115                 120                 125


Glu Gly His Cys Lys Pro Trp Thr Asp Cys Thr Gln Phe Gly Phe Leu
    130                 135                 140


Thr Val Phe Pro Gly Asn Lys Thr His Asn Ala Val Cys Val Pro Gly
145                 150                 155                 160


Ser Pro Pro Ala Glu Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
                165                 170                 175


Gly Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu His His His His
            180                 185                 190


His His
```

<210> 410
<211> 399
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 410

```
Met His Arg Pro Arg Arg Arg Gly Thr Arg Pro Pro Pro Leu Ala Leu
1               5                   10                  15


Leu Ala Ala Leu Leu Leu Ala Ala Arg Gly Ala Asp Ala Gln Arg Pro
            20                  25                  30
```

```
Thr Gly Gly Pro Gly Cys Gly Pro Gly Arg Leu Leu Leu Gly Thr Gly
        35                  40                  45

Thr Asp Ala Arg Cys Cys Arg Val His Thr Thr Arg Cys Cys Arg Asp
    50                  55                  60

Tyr Pro Gly Glu Glu Cys Cys Ser Glu Trp Asp Cys Met Cys Val Gln
65                  70                  75                  80

Pro Glu Phe His Cys Gly Asp Pro Cys Cys Thr Thr Cys Arg His His
                85                  90                  95

Pro Cys Pro Pro Gly Gln Gly Val Gln Ser Gln Gly Lys Phe Ser Phe
            100                 105                 110

Gly Phe Gln Cys Ile Asp Cys Ala Ser Gly Thr Phe Ser Gly Gly His
        115                 120                 125

Glu Gly His Cys Lys Pro Trp Thr Asp Cys Thr Gln Phe Gly Phe Leu
    130                 135                 140

Thr Val Phe Pro Gly Asn Lys Thr His Asn Ala Val Cys Val Pro Gly
145                 150                 155                 160

Ser Pro Pro Ala Glu Pro Glu Pro Arg Gly Pro Thr Ile Lys Pro Cys
                165                 170                 175

Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro Ser Val
            180                 185                 190

Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser
        195                 200                 205

Pro Ile Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp
    210                 215                 220
```

```
Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln
225                 230                 235                 240

Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser
                245                 250                 255

Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys
            260                 265                 270

Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile
        275                 280                 285

Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu Pro
    290                 295                 300

Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met
305                 310                 315                 320

Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn
                325                 330                 335

Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp Ser
            340                 345                 350

Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys Asn
        355                 360                 365

Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly Leu
    370                 375                 380

His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
385                 390                 395
```

<210> 411
<211> 393
<212> PRT
<213> Artificial Sequence

<220>

<223> synthetic

<400> 411

```
Met His Arg Pro Arg Arg Arg Gly Thr Arg Pro Pro Pro Leu Ala Leu
1               5                   10                  15


Leu Ala Ala Leu Leu Leu Ala Ala Arg Gly Ala Asp Ala Gln Arg Pro
            20                  25                  30


Thr Gly Gly Pro Gly Cys Gly Pro Gly Arg Leu Leu Leu Gly Thr Gly
        35                  40                  45


Thr Asp Ala Arg Cys Cys Arg Val His Thr Thr Arg Cys Cys Arg Asp
    50                  55                  60


Tyr Pro Gly Glu Glu Cys Cys Ser Glu Trp Asp Cys Met Cys Val Gln
65                  70                  75                  80


Pro Glu Phe His Cys Gly Asp Pro Cys Cys Thr Thr Cys Arg His His
                85                  90                  95


Pro Cys Pro Pro Gly Gln Gly Val Gln Ser Gln Gly Lys Phe Ser Phe
            100                 105                 110


Gly Phe Gln Cys Ile Asp Cys Ala Ser Gly Thr Phe Ser Gly Gly His
        115                 120                 125


Glu Gly His Cys Lys Pro Trp Thr Asp Cys Thr Gln Phe Gly Phe Leu
    130                 135                 140


Thr Val Phe Pro Gly Asn Lys Thr His Asn Ala Val Cys Val Pro Gly
145                 150                 155                 160


Ser Pro Pro Ala Glu Pro Asp Lys Thr His Thr Cys Pro Pro Cys Pro
                165                 170                 175


Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
            180                 185                 190
```

```
Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
        195                 200                 205

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
    210                 215                 220

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
225                 230                 235                 240

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
                245                 250                 255

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
            260                 265                 270

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
        275                 280                 285

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
    290                 295                 300

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
305                 310                 315                 320

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
                325                 330                 335

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
            340                 345                 350

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
        355                 360                 365

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
    370                 375                 380
```

Lys Ser Leu Ser Leu Ser Pro Gly Lys
385 390

<210> 412
<211> 194
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 412

Met His Arg Pro Arg Arg Arg Gly Thr Arg Pro Pro Pro Leu Ala Leu
1 5 10 15

Leu Ala Ala Leu Leu Leu Ala Ala Arg Gly Ala Asp Ala Gln Arg Pro
20 25 30

Thr Gly Gly Pro Gly Cys Gly Pro Gly Arg Leu Leu Leu Gly Thr Gly
35 40 45

Lys Asp Ala Arg Cys Cys Arg Val His Pro Thr Arg Cys Cys Arg Asp
50 55 60

Tyr Gln Gly Glu Glu Cys Cys Ser Glu Trp Asp Cys Val Cys Val Gln
65 70 75 80

Pro Glu Phe His Cys Gly Asn Pro Cys Cys Thr Thr Cys Gln His His
85 90 95

Pro Cys Pro Ser Gly Gln Gly Val Gln Pro Gln Gly Lys Phe Ser Phe
100 105 110

Gly Phe Arg Cys Val Asp Cys Ala Leu Gly Thr Phe Ser Arg Gly His
115 120 125

Asp Gly His Cys Lys Pro Trp Thr Asp Cys Thr Gln Phe Gly Phe Leu
130 135 140

```
Thr Val Phe Pro Gly Asn Lys Thr His Asn Ala Val Cys Val Pro Gly
145                 150                 155                 160


Ser Pro Pro Ala Glu Pro Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
                165                 170                 175


Gly Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu His His His His
            180                 185                 190


His His
```

<210> 413
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic

<400> 413

```
Met Ala Gln His Gly Ala Met Gly Ala Phe Arg Ala Leu Cys Gly Leu
1               5                   10                  15


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


Gly Cys Gly Pro Gly Arg Leu Leu Leu Gly Thr Gly Thr Asp Ala Arg
        35                  40                  45


Cys Cys Arg Val His Thr Thr Arg Cys Cys Arg Asp Tyr Pro Gly Glu
    50                  55                  60


Glu Cys Cys Ser Glu Trp Asp Cys Met Cys Val Gln Pro Glu Phe His
65                  70                  75                  80


Cys Gly Asp Pro Cys Cys Thr Thr Cys Arg His His Pro Cys Pro Pro
                85                  90                  95
```

```
Gly Gln Gly Val Gln Ser Gln Gly Lys Phe Ser Phe Gly Phe Gln Cys
            100                 105                 110

Ile Asp Cys Ala Ser Gly Thr Phe Ser Gly Gly His Glu Gly His Cys
        115                 120                 125

Lys Pro Trp Thr Asp Cys Thr Gln Phe Gly Phe Leu Thr Val Phe Pro
    130                 135                 140

Gly Asn Lys Thr His Asn Ala Val Cys Val Pro Gly Ser Pro Pro Ala
145                 150                 155                 160

Glu Pro Leu Gly Trp Leu Thr Val Val Leu Leu Ala Val Ala Ala Cys
                165                 170                 175

Val Leu Leu Leu Thr Ser Ala Gln Leu Gly Leu His Ile Trp Gln Leu
            180                 185                 190

Arg Ser Gln Cys Met Trp Pro Arg Glu Thr Gln Leu Leu Leu Glu Val
        195                 200                 205

Pro Pro Ser Thr Glu Asp Ala Arg Ser Cys Gln Phe Pro Glu Glu Glu
    210                 215                 220

Arg Gly Glu Arg Ser Ala Glu Glu Lys Gly Arg Leu Gly Asp Leu Trp
225                 230                 235                 240

Val
```