SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.

<120> Anti-IL-33 Antibodies and Uses Thereof

<130> 1850-WO

<140> TBA
<141>

<150> 61/778,687
<151> 2013-03-13

<150> 61/819,018
<151> 2013-05-03

<160> 323

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 1
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cgtctggatt caccttcagt agttatggca tgcattgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagaaa taaatactat 180
acagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatgg acagcctgag agccgaggac acggctgtgt attactgtgc gagagagagg 300
tatatcagca gctattatgg ggggttcgac ccctggggcc agggagccct ggtcaccgtc 360
tcctca 366

<210> 2
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 2
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 Asp Gly Arg Asn Lys Tyr Tyr Thr 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 Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Glu Arg Tyr Ile Ser Ser Tyr Tyr Gly Gly Phe Asp Pro Trp
            100                 105                 110
Gly Gln Gly Ala Leu Val Thr Val Ser Ser
        115                 120
```

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

<220>
<223> Synthetic

<400> 3
ggattcacct tcagtagtta tggc 24

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

<220>
<223> Synthetic

<400> 4
Gly Phe Thr Phe Ser Ser Tyr Gly
 1   5

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

<220>
<223> Synthetic

<400> 5
atatggtatg atggaagaaa taaa 24

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

<220>
<223> Synthetic

<400> 6
Ile Trp Tyr Asp Gly Arg Asn Lys
 1   5

<210> 7
<211> 45
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 7
gcgagagaga ggtatatcag cagctattat ggggggttcg acccc 45

<210> 8
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 8
Ala Arg Glu Arg Tyr Ile Ser Ser Tyr Tyr Gly Gly Phe Asp Pro
 1   5   10   15

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

<220>
<223> Synthetic

<400> 9
gacatccaga tgacccagtc tccatcctcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattagt agttggttag cctggtatca gcagaaacca 120
gggaaagccc ctaaggtcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaacag gctaacagtt tcccattcac tttcggccct 300
gggaccaaac tggatatcaa g 321

<210> 10
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

100 105

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

<220>
<223> Synthetic

<400> 11
cagggtatta gtagttgg 18

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 13
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 14
Ala Ala Ser
1

<210> 15
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 15
caacaggcta acagtttccc attcact 27

<210> 16
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 16
Gln Gln Ala Asn Ser Phe Pro Phe Thr
1 5

<210> 17
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 17
gaggtgcagc tgttggagtc tgggggagac ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagc agctatgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagtt attagtggta gtggaagtag cacagactac 180
gcagactccg tgaagggccg gttcaccatt tccagagaca attccaggga cacgctgcat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaaacgttc 300
tactacttct acggtttgga cgtctggggc caagggacca cggtcaccgt ctcctca 357

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 19
ggattcacct tcagcagcta tgcc 24

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 21
attagtggta gtggaagtag caca 24

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

<220>
<223> Synthetic

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

<210> 23
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 23
gcgaaaacgt tctactactt ctacggtttg gacgtc 36

<210> 24
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 24
Ala Lys Thr Phe Tyr Tyr Phe Tyr Gly Leu Asp Val
 1   5   10

<210> 25
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 25
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctttaagaga cagagtcacc 60
atcacttgcc gggcgagtca gggcattagc aattatttag cctggtatca gcagaaacca 120
gggaaagttc ctaaggtcct aatctatgct gcatccactt tgcaatcagg ggtcccatct 180
cggttcagtg gcagtggatc tgggacagtt ttcactctca ccatcagcag cctgcagact 240
gaagatgttg caacttatta ctgtcaaaag tatagcagtg ccccattcac tttcggccct 300
gggaccaaag tggatatcaa a   321

<210> 26
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 26
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Arg
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Val Pro Lys Val Leu Ile
        35   40   45
Tyr Ala Ala Ser Thr Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Val Phe Thr Leu Thr Ile Ser Ser Leu Gln Thr
65   70   75   80
Glu Asp Val Ala Thr Tyr Tyr Cys Gln Lys Tyr Ser Ser Ala Pro Phe
                85   90   95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100   105

<210> 27
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 27
cagggcatta gcaattat 18

<210> 28
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 28
Gln Gly Ile Ser Asn Tyr
1 5

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

<220>
<223> Synthetic

<400> 29
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 30
Ala Ala Ser
1

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

<220>
<223> Synthetic

<400> 31
caaaagtata gcagtgcccc attcact 27

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

<220>
<223> Synthetic

<400> 32
Gln Lys Tyr Ser Ser Ala Pro Phe Thr
 1   5

<210> 33
<211> 351
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 33
caggtgcttc tggtacagtc tggggctgag gtgaagaagc ctggggccac agtgaaggtc 60
tcctgcaagg cttctggatc cactttcacc ggctactata tgcactgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcaacccta acaatggtgg cacaaactat 180
gcacagaagt ttcagggcag ggtcaccatg accagggaca cgtccatcag cacagcctac 240
atggaattga gcaggctgag atctgacgac acggccgtat attactgtgc gagagagttg 300
cggtataact ggaagtcctg gggccaggga accctggtca ccgtctcctc a   351

<210> 34
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 35
ggatccactt tcaccggcta ctat 24

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 37
atcaacccta acaatggtgg caca 24

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

<220>
<223> Synthetic

<400> 38
Ile Asn Pro Asn Asn Gly Gly Thr
1 5

<210> 39
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 39
gcgagagagt tgcggtataa ctggaagtcc 30

<210> 40
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 40
Ala Arg Glu Leu Arg Tyr Asn Trp Lys Ser
 1   5   10

<210> 41
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 41
gaaattgtgt tgacgcagtc tccaggcacc ctgtctttgt ctccagggga aagagtcacc 60
ctctcctgca gggccagtca gagtgttggc aggccctact tagcctggta ccaacagata 120
cctggccagg ctcccaggct cctcatctat ggtgcatcca gcagggccac tgacatccca 180
gacaggttca gtggcaatgg gtctgggaca gacttcactc tcaccatcag tagactggag 240
cctgaagatt ttgcagtgta ttactgtcag cagtatgata attcccctta tacttttggc 300
caggggacca ggctggagat caaa   324

<210> 42
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

<210> 43
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 43
cagagtgttg gcaggcccta c   21

<210> 44
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 44
Gln Ser Val Gly Arg Pro Tyr
 1   5

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

<220>
<223> Synthetic

<400> 45
ggtgcatcc   9

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

<220>
<223> Synthetic

<400> 46
Gly Ala Ser
 1

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

<220>
<223> Synthetic

<400> 47
cagcagtatg ataattcccc ttatact   27

<210> 48
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

<210> 49
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 49
gaggtgcagc tggtggagtc tgggggaggc ttggtacaac ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttaga agctttgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggaatt ggtctcagat ctcaggacta gtggtggtag tacatactac 180
gcagactccg tgaagggccg gctcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaaagccac 300
tatagcacca gctggttcgg gggctttgac tactggggcc agggaaccct ggtcactgtc 360
tcctca 366

<210> 50
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 51
ggattcacct ttagaagctt tgcc 24

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

<220>
<223> Synthetic

<400> 52
Gly Phe Thr Phe Arg Ser Phe Ala
 1   5

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

<220>
<223> Synthetic

<400> 53
ctcaggacta gtggtggtag taca   24

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

<220>
<223> Synthetic

<400> 54
Leu Arg Thr Ser Gly Gly Ser Thr
 1   5

<210> 55
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 55
gcgaaaagcc actatagcac cagctggttc gggggctttg actac   45

<210> 56
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 56
Ala Lys Ser His Tyr Ser Thr Ser Trp Phe Gly Gly Phe Asp Tyr
 1   5   10   15

<210> 57
<211> 321

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 57
gacatccaga tgacccagtc tccatcttcc gtgtctgctt ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggttttagc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcaccaa cctgcagcct 240
gaagattttg caacttacta ttgtcaacag gctaacagtt tccctctcac tttcggcgga 300
gggaccaagg tggagatcaa a 321

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

<220>
<223> Synthetic

<400> 58
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Phe Ser Ser Trp
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Asn Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Ser Phe Pro Leu
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 59
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 59
cagggtttta gcagctgg 18

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

<220>
<223> Synthetic

<400> 60

Gln Gly Phe Ser Ser Trp
1 5

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

<220>
<223> Synthetic

<400> 61
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 62
Ala Ala Ser
1

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

<220>
<223> Synthetic

<400> 63
caacaggcta acagtttccc tctcact 27

<210> 64
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 64
Gln Gln Ala Asn Ser Phe Pro Leu Thr
1 5

<210> 65
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 65
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacgtttagc agctatgtca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcaagt attagtggta atggtggtag cacaaactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgttt 240
ctggaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaatcactg 300
ggaactacca cgacttttt ggggtttgac tattggggcc agggaaccct ggtcaccgtc 360
tcctca 366

<210> 66
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

<210> 67
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 67
ggattcacgt ttagcagcta tgtc 24

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

<220>
<223> Synthetic

<400> 68
Gly Phe Thr Phe Ser Ser Tyr Val
 1   5

<210> 69
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 69
attagtggta atggtggtag caca 24

<210> 70
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

<210> 71
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 71
gcgaaatcac tgggaactac cacgactttt ttggggtttg actat 45

<210> 72
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 72
Ala Lys Ser Leu Gly Thr Thr Thr Thr Phe Leu Gly Phe Asp Tyr
1 5 10 15

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

<220>
<223> Synthetic

<400> 73

gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattagc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctaaactcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacatat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaacag gctaacagtt tccctctcac tttcggcgga 300
gggaccaagg tggagatcaa a 321

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

<220>
<223> Synthetic

<400> 74
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
20 25 30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Tyr Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Ser Phe Pro Leu
85 90 95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 75
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 75
cagggtatta gcagctgg 18

<210> 76
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 76
Gln Gly Ile Ser Ser Trp
1 5

<210> 77
<211> 9
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 77
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 78
Ala Ala Ser
1

<210> 79
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 79
caacaggcta acagtttccc tctcact 27

<210> 80
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 80
Gln Gln Ala Asn Ser Phe Pro Leu Thr
1 5

<210> 81
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 81
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60
acctgcactg tctctggtgg ctccatcagt agttattact ggagctggat ccggcagccc 120
ccagggaagg gactggagtt gattgggtat atttattaca gtgggagcac caattataac 180
ccctccctca agagtcgagt caccatatct gtagacacgt ccaagaacca cttctccctg 240
aagctgagct ctgtgaccgc tgcggacacg gccgtatatt actgtgcgag atcccagtat 300

accagtagtt ggtacggttc ttttgatatc tggggccaag ggacaatggt caccgtctct 360
tca 363

<210> 82
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 83
ggtggctcca tcagtagtta ttac 24

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

<220>
<223> Synthetic

<400> 84
Gly Gly Ser Ile Ser Ser Tyr Tyr
1 5

<210> 85
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 85
atttattaca gtgggagcac c 21

<210> 86
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

<210> 87
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 87
gcgagatccc agtataccag tagttggtac ggttcttttg atatc 45

<210> 88
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 88
Ala Arg Ser Gln Tyr Thr Ser Ser Trp Tyr Gly Ser Phe Asp Ile
1 5 10 15

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

<220>
<223> Synthetic

<400> 89
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattagc acctggttag cctggtttca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccactt tacaaggtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggccagaa ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaacag gctaacagtt tcccgtggac gttcggccaa 300
gggaccaagg tggaaatcaa a 321

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 91
cagggtatta gcacctgg   18

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

<220>
<223> Synthetic

<400> 92
Gln Gly Ile Ser Thr Trp
 1   5

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

<220>
<223> Synthetic

<400> 93
gctgcatcc   9

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

<220>
<223> Synthetic

<400> 94
Ala Ala Ser
 1

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

<220>
<223> Synthetic

<400> 95
caacaggcta acagtttccc gtggacg 27

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

<220>
<223> Synthetic

<400> 96
Gln Gln Ala Asn Ser Phe Pro Trp Thr
 1   5

<210> 97
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 97
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cctctggtta cacctttaac agctatggta tcagctgggt gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcagctccc acaatggtaa cagtcactat 180
gtacagaagt tccagggcag agtctccatg accacagaca catccacgag tacagcctac 240
atggaactga ggagccttag atctgacgac acggccgtgt attactgtgc gagacactcg 300
tataccacca gctggtacgg gggttttgac tattggggcc agggaaccct ggtcaccgtc 360
tcctca 366

<210> 98
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 98
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Asn Ser Tyr
            20   25   30
Gly Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Trp Ile Ser Ser His Asn Gly Asn Ser His Tyr Val Gln Lys Phe
    50   55   60
Gln Gly Arg Val Ser Met Thr Thr Asp Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg His Ser Tyr Thr Thr Ser Trp Tyr Gly Gly Phe Asp Tyr Trp
            100   105   110
Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

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

<220>
<223> Synthetic

<400> 99
ggttacacct ttaacagcta tggt   24

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 101
atcagctccc acaatggtaa cagt   24

<210> 102

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

<220>
<223> Synthetic

<400> 102
Ile Ser Ser His Asn Gly Asn Ser
 1   5

<210> 103
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 103
gcgagacact cgtataccac cagctggtac gggggttttg actat   45

<210> 104
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 104
Ala Arg His Ser Tyr Thr Thr Ser Trp Tyr Gly Gly Phe Asp Tyr
 1   5   10   15

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

<220>
<223> Synthetic

<400> 105
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggttttagc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctcagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggtcagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaacag gctaacagtt tccctctcac tttcggcgga 300
gggaccaagg tggagatcaa a   321

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 107
cagggtttta gcagctgg   18

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 109
gctgcatcc   9

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

<220>

<223> Synthetic

<400> 110
Ala Ala Ser
 1

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

<220>
<223> Synthetic

<400> 111
caacaggcta acagtttccc tctcact 27

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

<220>
<223> Synthetic

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

<210> 113
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 113
gaggtgcagc tggtggagtc cgggggaggc ttggttcagc cgggggggtc cctgagactc 60
tcctgtgcag cctctggaat caccttgagc agctatggca tgagctgggt ccgccaggct 120
ccagggaagg gactggagtg ggtcgcatcc atttttggta gtggtggtgg cccatactac 180
gcagactccg tgaagggccg gttcaccatg tccagagaca attccaagaa cacgctgtat 240
ttgcaaatga acagcctgag agccgaggac acggccgtat attattgtgc gaaagatcga 300
tacagtggga gctactacgg aggttttgac tactggggcc ggggaaccct ggtcaccgtc 360
tcctca 366

<210> 114
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 114
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 Ile Thr Leu Ser Ser Tyr
            20                  25                  30
Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ala Ser Ile Phe Gly Ser Gly Gly Gly Pro Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Met Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Lys Asp Arg Tyr Ser Gly Ser Tyr Tyr Gly Gly Phe Asp Tyr Trp
            100                 105                 110
Gly Arg Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

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

<220>
<223> Synthetic

<400> 115
ggaatcacct tgagcagcta tggc 24

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

<220>
<223> Synthetic

<400> 116
```
Gly Ile Thr Leu Ser Ser Tyr Gly
 1               5
```

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

<220>
<223> Synthetic

<400> 117
attttggta gtggtggtgg ccca 24

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

<220>
<223> Synthetic

<400> 118
Ile Phe Gly Ser Gly Gly Gly Pro
 1   5

<210> 119
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 119
gcgaaagatc gatacagtgg gagctactac ggaggttttg actac   45

<210> 120
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 120
Ala Lys Asp Arg Tyr Ser Gly Ser Tyr Tyr Gly Gly Phe Asp Tyr
 1   5   10   15

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

<220>
<223> Synthetic

<400> 121
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattacc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctacactcct gatctatgct gcatccagtt tgcaaactgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaacattttg caacttacta ttgtcaacag gctaacagtt tccctcctac tttcggcgga 300
gggaccaagg tggagatcaa a   321

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

<220>
<223> Synthetic

<400> 122
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Thr Ser Trp
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Thr Leu Leu Ile

```
        35                  40                  45
Tyr Ala Ala Ser Ser Leu Gln Thr 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 His Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Ser Phe Pro Pro
                85                  90                  95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105
```

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

<220>
<223> Synthetic

<400> 123
cagggtatta ccagctgg 18

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

<220>
<223> Synthetic

<400> 124
```
Gln Gly Ile Thr Ser Trp
 1               5
```

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

<220>
<223> Synthetic

<400> 125
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 126
```
Ala Ala Ser
 1
```

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

<220>
<223> Synthetic

<400> 127
caacaggcta acagtttccc tcctact 27

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

<220>
<223> Synthetic

<400> 128
Gln Gln Ala Asn Ser Phe Pro Pro Thr
 1   5

<210> 129
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 129
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctaagactc 60
tcctgtgcag cctctggatt cacctttagc agttatgcct tgacctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctctttt attagtggta gtggtggtag gccattctac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa catgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccatat attactgtgc gaagtccctg 300
tataccacca gctggtacgg ggggttcgac tcctggggcc agggaaccct ggtcaccgtc 360
tcctca 366

<210> 130
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 130
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Ala Leu Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Phe Ile Ser Gly Ser Gly Gly Arg Pro Phe Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Met Leu Tyr

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

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

<220>
<223> Synthetic

<400> 131
ggattcacct ttagcagtta tgcc 24

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

<220>
<223> Synthetic

<400> 132
Gly Phe Thr Phe Ser Ser Tyr Ala
1 5

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

<220>
<223> Synthetic

<400> 133
attagtggta gtggtggtag gcca 24

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

<220>
<223> Synthetic

<400> 134
Ile Ser Gly Ser Gly Gly Arg Pro
1 5

<210> 135
<211> 45

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 135
gcgaagtccc tgtataccac cagctggtac ggggggttcg actcc 45

<210> 136
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 136
Ala Lys Ser Leu Tyr Thr Thr Ser Trp Tyr Gly Gly Phe Asp Ser
 1 5 10 15

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

<220>
<223> Synthetic

<400> 137
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtgtcgtc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttatta ttgtcaacag tctaacagtt tccctttcac tctcggccct 300
gggaccaaag tggatatcaa 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 Val Ser Ala Ser Val Gly
 1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Val Val Ser Trp
 20 25 30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Asn Ser Phe Pro Phe
 85 90 95

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

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

<220>
<223> Synthetic

<400> 139
cagggtgtcg tcagctgg 18

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

<220>
<223> Synthetic

<400> 140
Gln Gly Val Val Ser Trp
1 5

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

<220>
<223> Synthetic

<400> 141
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 142
Ala Ala Ser
1

<210> 143
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 143
caacagtcta acagtttccc tttc 24

<210> 144
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 144
Gln Gln Ser Asn Ser Phe Pro Phe
1 5

<210> 145
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 145
caggtgcagc tggtgcagtc tggggctgaa gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggata caccttcacc ggccactata tgtactggat gcgacaggcc 120
cctggacaag ggcttgagtg gatgggatgg atcaacccta acagtggtgg cacaaactat 180
gcacagaagt ttcaggacag ggtcaccatg accagggaca cgtccatcag cacagcctac 240
atggagctga gcaggctgag atctgacgac acggccgtgt attactgtgc gagagggaga 300
tatggcagta gctggtacgg ggggtttgag tactggggcc agggaaccct ggtcaccgtc 360
tcctca 366

<210> 146
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 147
ggatacacct tcaccggcca ctat 24

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

<220>
<223> Synthetic

<400> 148
Gly Tyr Thr Phe Thr Gly His Tyr
1 5

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

<220>
<223> Synthetic

<400> 149
atcaacccta acagtggtgg caca 24

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

<220>
<223> Synthetic

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

<210> 151
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 151

gcgagaggga gatatggcag tagctggtac ggggggtttg agtac 45

<210> 152
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 152
Ala Arg Gly Arg Tyr Gly Ser Ser Trp Tyr Gly Gly Phe Glu Tyr
1 5 10 15

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

<220>
<223> Synthetic

<400> 153
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgttggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattacc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctaacctcct gatctatgct gcagccagtt tacaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacggat ttcactctca ccatcagcag cctgcagcct 240
gaagacttta caacttacta ttgtcaacag gcttacagtc tccctctcac tttcggcgga 300
gggaccaagg tggagatcaa 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 Val Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Thr Ser Trp
20 25 30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Asn Leu Leu Ile
35 40 45
Tyr Ala Ala Ala 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 Thr Thr Tyr Tyr Cys Gln Gln Ala Tyr Ser Leu Pro Leu
85 90 95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 155
<211> 18
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 155
cagggtatta ccagctgg 18

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 157
gctgcagcc 9

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

<220>
<223> Synthetic

<400> 158
Ala Ala Ala
 1

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

<220>
<223> Synthetic

<400> 159
caacaggctt acagtctccc tctcact 27

<210> 160
<211> 9
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 160
Gln Gln Ala Tyr Ser Leu Pro Leu Thr
 1   5

<210> 161
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 161
caggtgcagc tggtggagtc tgggggaggc gtggtccagc ctgggaggtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagt agctatggct tgcactgggt ccgccagtct 120
ccaggcaagg ggctggaatg ggtggcactt atatcatatg acggaagtaa taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag acctgaggac acggctggat atttctgtgc gaaatcccta 300
tatacaacca gctggtacgg gggctttgac tattggggcc agggaaccct ggtcaccgtc 360
tcctca   366

<210> 162
<211> 122
<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 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 Leu His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ala Leu Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Pro Glu Asp Thr Ala Gly Tyr Phe Cys
                85   90   95
Ala Lys Ser Leu Tyr Thr Thr Ser Trp Tyr Gly Gly Phe Asp Tyr Trp
            100   105   110
Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

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

<220>
<223> Synthetic

<400> 163
ggattcacct tcagtagcta tggc 24

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 165
atatcatatg acggaagtaa taaa 24

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

<220>
<223> Synthetic

<400> 166
Ile Ser Tyr Asp Gly Ser Asn Lys
1 5

<210> 167
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 167
gcgaaatccc tatatacaac cagctggtac gggggctttg actat 45

<210> 168
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 168
Ala Lys Ser Leu Tyr Thr Thr Ser Trp Tyr Gly Gly Phe Asp Tyr
 1   5   10   15

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

<220>
<223> Synthetic

<400> 169
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattaga agctggttag cctggtatca gcaaaaacca 120
gggaaagccc ctaacctcct gatctatgct gcgtccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaacag gctaacagtt tccctcccac tttcggccct 300
gggaccaaag tggatatcaa a   321

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

<220>
<223> Synthetic

<400> 170
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Ser Trp
            20   25   30
Leu Ala 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 Gln Gln Ala Asn Ser Phe Pro Pro
                85   90   95
Thr 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
cagggtatta gaagctgg   18

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 173
gctgcgtcc   9

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

<220>
<223> Synthetic

<400> 174
Ala Ala Ser
 1

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

<220>
<223> Synthetic

<400> 175
caacaggcta acagtttccc tcccact   27

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

<220>
<223> Synthetic

<400> 176
Gln Gln Ala Asn Ser Phe Pro Pro Thr

```
 1               5


<210> 177
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 177
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctgggtt caccttcagc aactatgcca tgacctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcaact atcagtggca gtggtgataa cacatactac 180
gcagactccg tgcagggccg gttcaccatc tccagaggcc attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agccgaggac acggccgtat attactgtgc gaaacctacg 300
tatagcagaa gctggtacgg tgcttttgat ttctggggcc aagggacaat ggtcaccgtc 360
tcttca                                                           366

<210> 178
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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


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

<220>
<223> Synthetic

<400> 179
gggttcacct tcagcaacta tgcc                                       24

<210> 180
```

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 181
atcagtggca gtggtgataa caca   24

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

<220>
<223> Synthetic

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

<210> 183
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 183
gcgaaaccta cgtatagcag aagctggtac ggtgcttttg atttc   45

<210> 184
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 184
Ala Lys Pro Thr Tyr Ser Arg Ser Trp Tyr Gly Ala Phe Asp Phe
 1   5   10   15

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

<220>
<223> Synthetic

<400> 185
gacatccaga tgacccagtc tccatcctcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattagc agctggttag cctggtatca gcagaaaccg 120
gggaaagccc ctcaactcct gatctatgct gcatccagat tgcaaagtgg ggtcccatca 180
aggttctggg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaacag gctaacaatt tcccattcac tttcggccct 300
gggaccaaag tggatatcaa 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 Val Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Gln Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Arg Leu Gln Ser Gly Val Pro Ser Arg Phe Trp Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Asn Phe Pro Phe
                85   90   95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100   105

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

<220>
<223> Synthetic

<400> 187
cagggtatta gcagctgg 18

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

<220>

<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 189
gctgcatcc   9

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

<220>
<223> Synthetic

<400> 190
Ala Ala Ser
 1

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

<220>
<223> Synthetic

<400> 191
caacaggcta acaatttccc attcact   27

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

<220>
<223> Synthetic

<400> 192
Gln Gln Ala Asn Asn Phe Pro Phe Thr
 1   5

<210> 193
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 193
caggttcagc tggtgcagtc tggagctgag gtgaagaagc ctggggcctc agtgaaggtc 60
tcctgcaagg cttctggtta cacctttacc agttatggta tcagctgggt gcgacaggcc 120
cctggacaag gccttgagtg gatgggatgg atccgcgctt acaatggtta cacaaactat 180
gcacagaagt ttcagggcag agtcaccatg accacagaca catccacgaa caccgcctac 240
atggagctga ggaccctgaa ttctgacgat acggccgttt attactgtgc gagagatcga 300
tatagtggga gcttccacgg taactttgac tactggggcc agggaaccct ggtcaccgtc 360
tcctca 366

<210> 194
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 195
ggttacacct ttaccagtta tggt 24

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 197
atccgcgctt acaatggtta caca   24

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

<220>
<223> Synthetic

<400> 198
Ile Arg Ala Tyr Asn Gly Tyr Thr
 1   5

<210> 199
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 199
gcgagagatc gatatagtgg gagcttccac ggtaactttg actac   45

<210> 200
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

<210> 201
<211> 321
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 201
gacatccaga tgacccagtc tccatcttcc gtgtctgcgt ctgtaggaga cagagtgacc 60
atcacttgtc gggcgagtca gggtattttc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctaaggtcct aatctatgct gcatccaatt tggaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaacag gctaacagtt taccgctcac tttcggcgga 300
gggaccaagg tggagatcaa a 321

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 203
cagggtattt tcagctgg 18

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

<220>
<223> Synthetic

<400> 204
Gln Gly Ile Phe Ser Trp
 1   5

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

<220>
<223> Synthetic

<400> 205
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 206
Ala Ala Ser
 1

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

<220>
<223> Synthetic

<400> 207
caacaggcta acagtttacc gctcact 27

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

<220>
<223> Synthetic

<400> 208
Gln Gln Ala Asn Ser Leu Pro Leu Thr
 1   5

<210> 209
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 209
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagt acctattcta tgcactgggt ccgccaggct 120

```
ccagggaagg gactggaata tgtttcaact attaataata atggggatac cacatattat 180
gcagactctg tgaagggcag attcaccatc tccagagaca attccaagaa cacgctgtat 240
cttcaactgg gcagcctgag acctgaggac atggctgtgt attactgtgc gagacagacg 300
tataccagca gctggtacgg ggggttcgac tcctggggcc agggaaccct ggtcaccgtc 360
tcctca                                                            366

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

<220>
<223> Synthetic

<400> 210
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 Thr Tyr
            20                  25                  30
Ser Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Tyr Val
        35                  40                  45
Ser Thr Ile Asn Asn Asn Gly Asp Thr Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Leu Gly Ser Leu Arg Pro Glu Asp Met Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gln Thr Tyr Thr Ser Ser Trp Tyr Gly Gly Phe Asp Ser Trp
            100                 105                 110
Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120


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

<220>
<223> Synthetic

<400> 211
ggattcacct tcagtaccta ttct                                        24

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

<220>
<223> Synthetic

<400> 212
Gly Phe Thr Phe Ser Thr Tyr Ser
 1               5


<210> 213
<211> 24
```

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 213
attaataata atggggatac caca 24

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

<220>
<223> Synthetic

<400> 214
Ile Asn Asn Asn Gly Asp Thr Thr
 1 5

<210> 215
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 215
gcgagacaga cgtataccag cagctggtac ggggggttcg actcc 45

<210> 216
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 216
Ala Arg Gln Thr Tyr Thr Ser Ser Trp Tyr Gly Gly Phe Asp Ser
 1 5 10 15

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

<220>
<223> Synthetic

<400> 217
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggcga cagagtcacc 60
atcacttgtc gggcgagtca gggtattacc agctggttag cctggtatca gcagaaacca 120
gggaaagccc ctaaactcct gatctatgct gcatccaatt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcaccag cctgcagcct 240

gaggattttg caacttacta ttgtcaacag gctaacagtc tcccattcac tttcggccct 300
gggaccaaag tggatatcaa 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 Val Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Thr Ser Trp
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser 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 Thr Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Ser Leu Pro Phe
                85   90   95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
            100   105

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

<220>
<223> Synthetic

<400> 219
cagggtatta ccagctgg 18

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

<220>
<223> Synthetic

<400> 220
Gln Gly Ile Thr Ser Trp
 1   5

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

<220>
<223> Synthetic

<400> 221
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 222
Ala Ala Ser
1

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

<220>
<223> Synthetic

<400> 223
caacaggcta acagtctccc attcact 27

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

<220>
<223> Synthetic

<400> 224
Gln Gln Ala Asn Ser Leu Pro Phe Thr
1 5

<210> 225
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 225
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacccttagc agctatgcca tgagctgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtctcagct attagtggta gtggtggcag cacatactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa ctcgctgtat 240
ctgcaattga acagcctgag agccgaggac acggccgtat attactgtgc gaagacgctg 300
tatactacca gctggtacgg gggcttccag cactggggcc agggcaccct ggtcactgtc 360
tcctca 366

<210> 226

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

<220>
<223> Synthetic

<400> 226
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 Leu Ser Ser Tyr
            20   25   30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Leu Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Lys Thr Leu Tyr Thr Thr Ser Trp Tyr Gly Gly Phe Gln His Trp
            100   105   110
Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

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

<220>
<223> Synthetic

<400> 227
ggattcaccc ttagcagcta tgcc   24

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

<220>
<223> Synthetic

<400> 228
Gly Phe Thr Leu Ser Ser Tyr Ala
 1   5

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

<220>
<223> Synthetic

<400> 229

attagtggta gtggtggcag caca 24

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

<220>
<223> Synthetic

<400> 230
Ile Ser Gly Ser Gly Gly Ser Thr
1 5

<210> 231
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 231
gcgaagacgc tgtatactac cagctggtac gggggcttcc agcac 45

<210> 232
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 232
Ala Lys Thr Leu Tyr Thr Thr Ser Trp Tyr Gly Gly Phe Gln His
1 5 10 15

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

<220>
<223> Synthetic

<400> 233
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctataggaga cagagtcacc 60
atcacttgtc gggcgagtca gggaatcagc agttggttag cctggtatca gcagaaacca 120
gggaaagtcc ctaagctcct gatctatgct gcgtcctctt tgcaaagtgg gttcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagtag cctgcagccc 240
gaagattttg caacttacta ttgtcaacag actcacagtt tcccgtggac ggtcggccaa 300
gggaccaagg tggaaatcaa a 321

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

<220>
<223> Synthetic

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

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

<220>
<223> Synthetic

<400> 235
cagggaatca gcagttgg   18

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

<220>
<223> Synthetic

<400> 236
Gln Gly Ile Ser Ser Trp
 1   5

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

<220>
<223> Synthetic

<400> 237
gctgcgtcc   9

<210> 238
<211> 3
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 238
Ala Ala Ser
 1

<210> 239
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 239
caacagactc acagtttccc gtgg 24

<210> 240
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 240
Gln Gln Thr His Ser Phe Pro Trp
 1 5

<210> 241
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 241
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggggtc cctgagactc 60
tcctgtgcag cctctggatt cacccttagg agctatttca tgacctgggt ccgccaggtt 120
ccagggaagg ggctggaggg ggtctcagct attagtggca ttagtggtgg cacatactac 180
acagactccg ttaagggccg gttcaccatc tccagagaca attccaagaa cacgctgttt 240
ctgcaaatga acagcctgag agccgaggac acggccgtat atttctgtgc gagaacggtg 300
tatagtagta gttactacgg gggcttccag cactggggcc agggcaccct ggtcaccgtc 360
tcctca 366

<210> 242
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<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 Leu Arg Ser Tyr
            20   25   30
Phe Met Thr Trp Val Arg Gln Val Pro Gly Lys Gly Leu Glu Gly Val
        35   40   45
Ser Ala Ile Ser Gly Ile Ser Gly Gly Thr Tyr Tyr Thr 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 Phe Cys
                85   90   95
Ala Arg Thr Val Tyr Ser Ser Ser Tyr Tyr Gly Gly Phe Gln His Trp
            100   105   110
Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

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

<220>
<223> Synthetic

<400> 243
ggattcaccc ttaggagcta tttc   24

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

<220>
<223> Synthetic

<400> 244
Gly Phe Thr Leu Arg Ser Tyr Phe
 1   5

<210> 245
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 245
attagtggca ttagtggtgg caca   24

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

<220>
<223> Synthetic

<400> 246
Ile Ser Gly Ile Ser Gly Gly Thr
 1   5

<210> 247
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 247
gcgagaacgg tgtatagtag tagttactac gggggcttcc agcac   45

<210> 248
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 248
Ala Arg Thr Val Tyr Ser Ser Ser Tyr Tyr Gly Gly Phe Gln His
 1   5   10   15

<210> 249
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 249
gacatccaga tgacccagtc tccatcttcc gtgtctgtat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattagc agttggttag cctggtatca gcagaaacca 120
gggaaagccc ctaagctcct gatctatgtt gcatccagtt tacaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttacta ttgtcaacag actaacagtt tccctctcac tttcggcgga 300
gggaccaagg tggagatcaa a   321

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

<220>
<223> Synthetic

<400> 250
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Val Ser Val Gly
 1   5   10   15

```
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
            20                  25                  30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45
Tyr Val Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Thr Asn Ser Phe Pro 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
cagggtatta gcagttgg 18

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

<220>
<223> Synthetic

<400> 252
```
Gln Gly Ile Ser Ser Trp
 1               5
```

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

<220>
<223> Synthetic

<400> 253
gttgcatcc 9

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

<220>
<223> Synthetic

<400> 254
```
Val Ala Ser
```

1

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

<220>
<223> Synthetic

<400> 255
caacagacta acagtttccc tctcact 27

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

<220>
<223> Synthetic

<400> 256
Gln Gln Thr Asn Ser Phe Pro Leu Thr
1 5

<210> 257
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 257
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgtgcag cctctggatt cacccttagg agttatgtca tgtactgggt ccgccagggt 120
ccagggaagg ggctggaggg ggtctcaggt attagtggca gtagtggtgg cacatactac 180
acagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa cacgctgttt 240
ctgcaaatga acagcctgag agccgaggac acggccgtat atttctgtgc gagatcggtg 300
tatagtacca cctggtacgg gggcttccag cactggggcc agggcaccct ggtcaccgtc 360
tcctca 366

<210> 258
<211> 122
<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 Leu Arg Ser Tyr
20 25 30
Val Met Tyr Trp Val Arg Gln Gly Pro Gly Lys Gly Leu Glu Gly Val
35 40 45

```
Ser Gly Ile Ser Gly Ser Ser Gly Gly Thr Tyr Tyr Thr 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 Phe Cys
                85                  90                  95
Ala Arg Ser Val Tyr Ser Thr Thr Trp Tyr Gly Gly Phe Gln His Trp
            100                 105                 110
Gly Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120
```

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

<220>
<223> Synthetic

<400> 259
ggattcaccc ttaggagtta tgtc 24

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

<220>
<223> Synthetic

<400> 260
```
Gly Phe Thr Leu Arg Ser Tyr Val
 1               5
```

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

<220>
<223> Synthetic

<400> 261
attagtggca gtagtggtgg caca 24

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

<220>
<223> Synthetic

<400> 262
```
Ile Ser Gly Ser Ser Gly Gly Thr
 1               5
```

<210> 263
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 263
gcgagatcgg tgtatagtac cacctggtac gggggcttcc agcac 45

<210> 264
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 264
Ala Arg Ser Val Tyr Ser Thr Thr Trp Tyr Gly Gly Phe Gln His
1 5 10 15

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

<220>
<223> Synthetic

<400> 265
gacatccaga tgacccagtc tccatcttcc gtgtctgtat ctgtgggaga cagagtcacc 60
atcacttgtc gggcgagtca ggttattagc agttggttag cctggtatca gctgaaacca 120
gggaaagccc ctaaactcct gatctatgct gcatccagtt tacaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcgg cctgcagcct 240
gaagattttg cagtttacta ttgtcaacag actaacagtt tccctctcac 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 Val Ser Val Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Val Ile Ser Ser Trp
20 25 30
Leu Ala Trp Tyr Gln Leu Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Gly Leu Gln Pro

65 70 75 80
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Thr Asn Ser Phe 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>
<223> Synthetic

<400> 267
caggttatta gcagttgg 18

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

<220>
<223> Synthetic

<400> 268
Gln Val Ile Ser Ser Trp
1 5

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

<220>
<223> Synthetic

<400> 269
gctgcatcc 9

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

<220>
<223> Synthetic

<400> 270
Ala Ala Ser
1

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

<220>
<223> Synthetic

<400> 271
caacagacta acagtttccc tctcact 27

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

<220>
<223> Synthetic

<400> 272
Gln Gln Thr Asn Ser Phe Pro Leu Thr
1 5

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

<220>
<223> Synthetic

<400> 273
gaggtgcagc tggtggagtc tgggggaaac ttggaacagc ctgggggtc ccttagactc 60
tcctgtacag cctctggatt cacctttagc agatctgcca tgaactgggt ccgccgggct 120
ccagggaagg ggctggagtg ggtctcagga attagtggta gtggtggtcg aacatactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa tacgctatat 240
ctgcaaatga acagcctgag cgccgaggac acggccgcat attactgtgc gaaagattcg 300
tatactacca gttggtacgg aggtatggac gtctggggcc acgggaccac ggtcaccgtc 360
tcctca 366

<210> 274
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

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

100 105 110
Gly His 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 ttagcagatc tgcc 24

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

<220>
<223> Synthetic

<400> 276
Gly Phe Thr Phe Ser Arg Ser Ala
1 5

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

<220>
<223> Synthetic

<400> 277
attagtggta gtggtggtcg aaca 24

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

<220>
<223> Synthetic

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

<210> 279
<211> 45
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 279
gcgaaagatt cgtatactac cagttggtac ggaggtatgg acgtc 45

<210> 280
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 280
Ala Lys Asp Ser Tyr Thr Thr Ser Trp Tyr Gly Gly Met Asp Val
1 5 10 15

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

<220>
<223> Synthetic

<400> 281
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggtattttc agctggttag cctggtatca gcagaaacca 120
ggaaaagccc ctaagctcct gatctatgct gcttccagtt tacaaagtgg ggtcccatca 180
agattcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaggattttg caatttacta ttgtcaacag gctaacagtg tcccgatcac cttcggccaa 300
gggacacgac tggagattaa 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 Val Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Phe Ser Trp
20 25 30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Ile Tyr Tyr Cys Gln Gln Ala Asn Ser Val Pro Ile
85 90 95
Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
100 105

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

<220>
<223> Synthetic

<400> 283
cagggtattt tcagctgg 18

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

<220>
<223> Synthetic

<400> 284
Gln Gly Ile Phe Ser Trp
 1   5

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

<220>
<223> Synthetic

<400> 285
gctgcttcc 9

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

<220>
<223> Synthetic

<400> 286
Ala Ala Ser
 1

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

<220>
<223> Synthetic

<400> 287
caacaggcta acagtgtccc gatcacc 27

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

<220>
<223> Synthetic

<400> 288
Gln Gln Ala Asn Ser Val Pro Ile Thr
 1   5

<210> 289
<211> 366
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 289
gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctgggggtc cctgagactc 60
tcctgttcag cctctggatt cacctttagc agctatgcca tgaactgggt ccgccaggct 120
ccagggaagg ggctggagtg ggtcaccgct attagtggca gtggtggtgg cacatactac 180
gcagactccg tgaagggccg gttcaccatc tccagagaca attccaagaa ctcgctgttt 240
ctgcaattga acagcctgag agccgaggac acggccgtgt attactgtgc gaaacaaacg 300
tataccagca gctggtacgg tggctttgat atctggggcc aggggacaat ggtcaccgtc 360
tcttca   366

<210> 290
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 290
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 Ser Ala Ser Gly Phe Thr Phe Ser Ser Tyr
            20   25   30
Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Thr Ala Ile Ser Gly Ser Gly Gly Gly Thr Tyr Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser 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 Lys Gln Thr Tyr Thr Ser Ser Trp Tyr Gly Gly Phe Asp Ile Trp
            100   105   110
Gly Gln Gly Thr Met Val Thr Val Ser Ser
        115   120

<210> 291
<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 291
ggattcacct ttagcagcta tgcc 24

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

<220>
<223> Synthetic

<400> 292
Gly Phe Thr Phe Ser Ser Tyr Ala
 1 5

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

<220>
<223> Synthetic

<400> 293
attagtggca gtggtggtgg caca 24

<210> 294
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 294
Ile Ser Gly Ser Gly Gly Gly Thr
 1 5

<210> 295
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 295
gcgaaacaaa cgtataccag cagctggtac ggtggctttg atatc 45

<210> 296
<211> 15

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 296
Ala Lys Gln Thr Tyr Thr Ser Ser Trp Tyr Gly Gly Phe Asp Ile
 1   5   10   15

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

<220>
<223> Synthetic

<400> 297
gacatccaga tgacccagtc gccatcttcc gtgtccgcgt ctgtaggaga cagagtcacc 60
atcacttgtc gggcgagtca gggttttagt tcctggttag cctggtatca gcagatacca 120
gggaaagccc ccaagctcct gatctatgct gcatcaaggt tgcaaagtgg ggtcccatcc 180
aggttccgcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaggattttg caacttacta ttgtcaacag gctaacagtt tcccgctcac tttcggcgga 300
gggaccaagg tggagatcaa a   321

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

<220>
<223> Synthetic

<400> 298
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Phe Ser Ser Trp
            20   25   30
Leu Ala Trp Tyr Gln Gln Ile Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Arg Leu Gln Ser Gly Val Pro Ser Arg Phe Arg Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Asn Ser Phe Pro Leu
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

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

<220>
<223> Synthetic

<400> 299
cagggtttta gttcctgg 18

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

<220>
<223> Synthetic

<400> 300
Gln Gly Phe Ser Ser Trp
1 5

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

<220>
<223> Synthetic

<400> 301
gctgcatca 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>
<223> Synthetic

<400> 303
caacaggcta acagtttccc gctcact 27

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

<220>
<223> Synthetic

<400> 304
Gln Gln Ala Asn Ser Phe Pro Leu Thr
 1   5

<210> 305
<211> 167
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 305
Ser Ile Thr Gly Ile Ser Pro Ile Thr Glu Ser Leu Ala Ser Leu Ser
 1   5   10   15
Thr Tyr Asn Asp Gln Ser Ile Thr Phe Ala Leu Glu Asp Glu Ser Tyr
            20   25   30
Glu Ile Tyr Val Glu Asp Leu Lys Lys Asp Lys Lys Lys Asp Lys Val
        35   40   45
Leu Leu Ser Tyr Tyr Glu Ser Gln His Pro Ser Ser Glu Ser Gly Asp
    50   55   60
Gly Val Asp Gly Lys Met Leu Met Val Thr Leu Ser Pro Thr Lys Asp
65   70   75   80
Phe Trp Leu Gln Ala Asn Asn Lys Glu His Ser Val Glu Leu His Lys
                85   90   95
Cys Glu Lys Pro Leu Pro Asp Gln Ala Phe Phe Val Leu His Asn Arg
            100   105   110
Ser Phe Asn Cys Val Ser Phe Glu Cys Lys Thr Asp Pro Gly Val Phe
        115   120   125
Ile Gly Val Lys Asp Asn His Leu Ala Leu Ile Lys Val Asp Tyr Ser
    130   135   140
Glu Asn Leu Gly Ser Glu Asn Ile Leu Phe Lys Leu Ser Glu Ile Leu
145   150   155   160
Glu His His His His His His
                165

<210> 306
<211> 167
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 306
Ser Ile Thr Gly Ile Ser Pro Ile Thr Glu Ser Leu Ala Ser Leu Ser
 1   5   10   15
Thr Tyr Asn Asp Gln Ser Ile Thr Phe Ala Leu Glu Asp Glu Ser Tyr
            20   25   30
Glu Ile Tyr Val Glu Asp Leu Lys Lys Asp Lys Lys Lys Asp Lys Val
        35   40   45
Leu Leu Ser Tyr Tyr Glu Ser Gln His Pro Ser Ser Glu Ser Gly Asp
    50   55   60
Gly Val Asp Gly Lys Met Leu Met Val Thr Leu Ser Pro Thr Lys Asp
65   70   75   80
Phe Trp Leu Gln Ala Asn Asn Lys Glu His Ser Val Glu Leu His Lys

```
                85                  90                  95
Cys Glu Lys Pro Leu Pro Asp Gln Ala Phe Phe Val Leu His Asn Arg
            100                 105                 110
Ser Phe Asn Cys Val Ser Phe Glu Cys Lys Thr Asp Pro Gly Val Phe
        115                 120                 125
Ile Gly Val Lys Asp Asn His Leu Ala Leu Ile Lys Val Asp Tyr Ser
    130                 135                 140
Glu Asn Leu Gly Ser Glu Asn Ile Leu Phe Lys Leu Ser Glu Ile Leu
145                 150                 155                 160
Glu His His His His His His
                165
```

<210> 307
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 307
caggtcacct tgaaggagtc tggtcctgtg ctggtgaaac ccacagagag cctcacgctg 60
acctgctccg tctctggatt ctcactcagt aatgttagaa tgggtgtgag ctggatccgt 120
cagtccccag ggaaggccct ggagtggctt gcacacattt tttcgaatga cgaaaaatcc 180
tacaccacat ctctgaagac caggctcacc atctccaagg acacctccag aagccaggtg 240
gtccttacca tgaccgacat ggaccctggg gacacagcca catattactg tgcacggata 300
cggaatttgg cctttaatta ctggggccag ggaaccctgg tcaccgtctc ctca 354

<210> 308
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 308
```
Gln Val Thr Leu Lys Glu Ser Gly Pro Val Leu Val Lys Pro Thr Glu
 1               5                  10                  15
Ser Leu Thr Leu Thr Cys Ser Val Ser Gly Phe Ser Leu Ser Asn Val
            20                  25                  30
Arg Met Gly Val Ser Trp Ile Arg Gln Ser Pro Gly Lys Ala Leu Glu
        35                  40                  45
Trp Leu Ala His Ile Phe Ser Asn Asp Glu Lys Ser Tyr Thr Thr Ser
    50                  55                  60
Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Arg Ser Gln Val
65                  70                  75                  80
Val Leu Thr Met Thr Asp Met Asp Pro Gly Asp Thr Ala Thr Tyr Tyr
                85                  90                  95
Cys Ala Arg Ile Arg Asn Leu Ala Phe Asn Tyr Trp Gly Gln Gly Thr
            100                 105                 110
Leu Val Thr Val Ser Ser
        115
```

<210> 309
<211> 30
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 309
ggattctcac tcagtaatgt tagaatgggt 30

<210> 310
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 310
Gly Phe Ser Leu Ser Asn Val Arg Met Gly
 1 5 10

<210> 311
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 311
atttttcga atgacgaaaa a 21

<210> 312
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 312
Ile Phe Ser Asn Asp Glu Lys
 1 5

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

<220>
<223> Synthetic

<400> 313
gcacggatac ggaatttggc ctttaattac 30

<210> 314
<211> 10
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic

<400> 314
Ala Arg Ile Arg Asn Leu Ala Phe Asn Tyr
 1   5   10

<210> 315
<211> 339
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 315
gacttcgtga tgacccagtc tccagactcc ctggctgtgt ctctgggcga gagggccacc 60
atcaactgca agtccagcca gagtgtgtta cacaggtcca gcaataagaa ctacttagct 120
tggtatcagc agaagccagg acagcctcct aacctgctca tttactgggc atctacccgg 180
gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240
atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttatggtact 300
ctatttactt tcggccctgg gaccaaagtg gatatcaaa   339

<210> 316
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 316
Asp Phe Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
 1   5   10   15
Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu His Arg
            20   25   30
Ser Ser Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
        35   40   45
Pro Pro Asn Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
    50   55   60
Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
65   70   75   80
Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
                85   90   95
Tyr Tyr Gly Thr Leu Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile
            100   105   110
Lys

<210> 317
<211> 36
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 317
cagagtgtgt tacacaggtc cagcaataag aactac 36

<210> 318
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 318
Gln Ser Val Leu His Arg Ser Ser Asn Lys Asn Tyr
 1   5   10

<210> 319
<211> 9
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 319
tgggcatct 9

<210> 320
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 320
Trp Ala Ser
 1

<210> 321
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 321
cagcaatatt atggtactct atttact 27

<210> 322
<211> 9
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<400> 322
Gln Gln Tyr Tyr Gly Thr Leu Phe Thr
 1   5

<210> 323
<211> 338
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic
      Amino acids 1-310: Human ST2 (K19-S328 of
      accession number NP_057316.3)
      Amino acids 311-338: Myc-Myc-hexahistidine tag

<400> 323
Lys Phe Ser Lys Gln Ser Trp Gly Leu Glu Asn Glu Ala Leu Ile Val
 1   5   10   15
Arg Cys Pro Arg Gln Gly Lys Pro Ser Tyr Thr Val Asp Trp Tyr Tyr
            20   25   30
Ser Gln Thr Asn Lys Ser Ile Pro Thr Gln Glu Arg Asn Arg Val Phe
        35   40   45
Ala Ser Gly Gln Leu Leu Lys Phe Leu Pro Ala Ala Val Ala Asp Ser
    50   55   60
Gly Ile Tyr Thr Cys Ile Val Arg Ser Pro Thr Phe Asn Arg Thr Gly
65   70   75   80
Tyr Ala Asn Val Thr Ile Tyr Lys Lys Gln Ser Asp Cys Asn Val Pro
                85   90   95
Asp Tyr Leu Met Tyr Ser Thr Val Ser Gly Ser Glu Lys Asn Ser Lys
            100   105   110
Ile Tyr Cys Pro Thr Ile Asp Leu Tyr Asn Trp Thr Ala Pro Leu Glu
        115   120   125
Trp Phe Lys Asn Cys Gln Ala Leu Gln Gly Ser Arg Tyr Arg Ala His
    130   135   140
Lys Ser Phe Leu Val Ile Asp Asn Val Met Thr Glu Asp Ala Gly Asp
145   150   155   160
Tyr Thr Cys Lys Phe Ile His Asn Glu Asn Gly Ala Asn Tyr Ser Val
                165   170   175
Thr Ala Thr Arg Ser Phe Thr Val Lys Asp Glu Gln Gly Phe Ser Leu
            180   185   190
Phe Pro Val Ile Gly Ala Pro Ala Gln Asn Glu Ile Lys Glu Val Glu
        195   200   205
Ile Gly Lys Asn Ala Asn Leu Thr Cys Ser Ala Cys Phe Gly Lys Gly
    210   215   220
Thr Gln Phe Leu Ala Ala Val Leu Trp Gln Leu Asn Gly Thr Lys Ile
225   230   235   240
Thr Asp Phe Gly Glu Pro Arg Ile Gln Gln Glu Glu Gly Gln Asn Gln
                245   250   255
Ser Phe Ser Asn Gly Leu Ala Cys Leu Asp Met Val Leu Arg Ile Ala
            260   265   270
Asp Val Lys Glu Glu Asp Leu Leu Leu Gln Tyr Asp Cys Leu Ala Leu
        275   280   285
Asn Leu His Gly Leu Arg Arg His Thr Val Arg Leu Ser Arg Lys Asn
    290   295   300
Pro Ile Asp His His Ser Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
305   310   315   320

Gly Gly Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu His His His His
325 330 335
His His