SEQUENCE LISTING

<110> Wyeth LLC
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GAO, Yijie
BARD, Joel

<120> ANTI-NOTCH1 ANTIBODIES

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<170> PatentIn version 3.5

<210> 1
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<212> PRT
<213> Artificial Sequence

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<223> Synthetic peptide sequence

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Gly Gly Ala Gly Arg Asp Ile Pro Pro Pro Leu Ile Glu Glu Ala Cys
20 25 30

Glu Leu Pro Glu Cys Gln Glu Asp Ala Gly Asn Lys Val Cys Ser Leu
35 40 45

Gln Cys Asn Asn His Ala Cys Gly Trp Asp Gly Gly Asp Cys Ser Leu
50 55 60

Asn Phe Asn Asp Pro Trp Lys Asn Cys Thr Gln Ser Leu Gln Cys Trp
65 70 75 80

Lys Tyr Phe Ser Asp Gly His Cys Asp Ser Gln Cys Asn Ser Ala Gly
85 90 95

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

Pro Leu Tyr Asp Gln Tyr Cys Lys Asp His Phe Ser Asp Gly His Cys
115 120 125

Asp Gln Gly Cys Asn Ser Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys
130 135 140

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Ala Glu His Val Pro Glu Arg Leu Ala Ala Gly Thr Leu Val Val Val
145                 150                 155                 160

Val Leu Met Pro Pro Glu Gln Leu Arg Asn Ser Ser Phe His Phe Leu
                165                 170                 175

Arg Glu Leu Ser Arg Val Leu His Thr Asn Val Val Phe Lys Arg Asp
            180                 185                 190

Ala His Gly Gln Gln Met Ile Phe Pro Tyr Tyr Gly Arg Glu Glu Glu
        195                 200                 205

Leu Arg Lys His Pro Ile Lys Arg Ala Ala Glu Gly Trp Ala Ala Pro
    210                 215                 220

Asp Ala Leu Leu Gly Gln Val Lys Ala Ser Leu Leu Pro Gly Gly Ser
225                 230                 235                 240

Glu Gly Gly Arg Arg Arg Arg Glu Leu Asp Pro Met Asp Val Arg Gly
                245                 250                 255

Ser Ile Val Tyr Leu Glu Ile Asp Asn Arg Gln Cys Val Gln Ala Ser
            260                 265                 270

Ser Gln Cys Phe Gln Ser Ala Thr Asp Val Ala Ala Phe Leu Gly Ala
        275                 280                 285

Leu Ala Ser Leu Gly Ser Leu Asn Ile Pro Tyr Lys Ile Glu Ala Val
    290                 295                 300

Gln Ser Glu Thr Val Glu Pro Pro Pro Pro Ala Gln Leu His Phe Met
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys
                325                 330                 335

Ile Glu Trp His Glu Gly Gly Pro Pro His His His His His His
            340                 345                 350
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<210> 2
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<213> Homo sapiens

<400> 2

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

Gln Cys Asn Asn His Ala Cys Gly Trp Asp Gly Gly Asp Cys Ser Leu
        35                  40                  45

Asn Phe Asn Asp Pro Trp Lys Asn Cys Thr Gln Ser Leu Gln Cys Trp
    50                  55                  60

Lys Tyr Phe Ser Asp Gly His Cys Asp Ser Gln Cys Asn Ser Ala Gly
65                  70                  75                  80

Cys Leu Phe Asp Gly Phe Asp Cys Gln Arg Ala Glu Gly Gln Cys Asn
                85                  90                  95

Pro Leu Tyr Asp Gln Tyr Cys Lys Asp His Phe Ser Asp Gly His Cys
            100                 105                 110

Asp Gln Gly Cys Asn Ser Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys
        115                 120                 125

Ala Glu His Val Pro Glu Arg Leu Ala Ala Gly Thr Leu Val Val Val
    130                 135                 140

Val Leu Met Pro Pro Glu Gln Leu Arg Asn Ser Ser Phe His Phe Leu
145                 150                 155                 160

Arg Glu Leu Ser Arg Val Leu His Thr Asn Val Val Phe Lys Arg Asp
                165                 170                 175

Ala His Gly Gln Gln Met Ile Phe Pro Tyr Tyr Gly Arg Glu Glu Glu
            180                 185                 190

Leu Arg Lys His Pro Ile Lys Arg Ala Ala Glu Gly Trp Ala Ala Pro
        195                 200                 205

Asp Ala Leu Leu Gly Gln Val Lys Ala Ser Leu Leu Pro Gly Gly Ser
    210                 215                 220

Glu Gly Gly Arg Arg Arg Arg Glu Leu Asp Pro Met Asp Val Arg Gly
225                 230                 235                 240

Ser Ile Val Tyr Leu Glu Ile Asp Asn Arg Gln Cys Val Gln Ala Ser
                245                 250                 255

Ser Gln Cys Phe Gln Ser Ala Thr Asp Val Ala Ala Phe Leu Gly Ala
            260                 265                 270
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Leu Ala Ser Leu Gly Ser Leu Asn Ile Pro Tyr Lys Ile Glu Ala Val
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Gln Ser Glu Thr Val Glu Pro Pro Pro Pro Ala Gln Leu His Phe Met
290 295 300

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<212> DNA
<213> Artificial Sequence

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gcgggcaaca aggtctgcag cctgcagtgc aacaaccacg cgtgcggctg ggacggcggt 180

gactgctccc tcaacttcaa tgacccctgg aagaactgca cgcagtctct gcagtgctgg 240

aagtacttca gtgacggcca ctgtgacagc cagtgcaact cagccggctg cctcttcgac 300

ggctttgact gccagcgtgc ggaaggccag tgcaaccccc tgtacgacca gtactgcaag 360

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gagggtgggc ggcggcggag ggagctggac cccatggacg tccgcggctc catcgtctac 780

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gaaggtggcc caccacatca tcatcatcat cac 1053

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<212> DNA
<213> Homo sapiens

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tgggacggcg gtgactgctc cctcaacttc aatgacccct ggaagaactg cacgcagtct 180

ctgcagtgct ggaagtactt cagtgacggc cactgtgaca gccagtgcaa ctcagccggc 240

tgcctcttcg acggctttga ctgccagcgt gcggaaggcc agtgcaaccc cctgtacgac 300

cagtactgca aggaccactt cagcgacggg cactgcgacc agggctgcaa cagcgcggag 360

tgcgagtggg acgggctgga ctgtgcggag catgtacccg agaggctggc ggccggcacg 420

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cgggagctca gccgcgtgct gcacaccaac gtggtcttca agcgtgacgc acacggccag 540

cagatgatct tcccctacta cggccgcgag gaggagctgc gcaagcaccc catcaagcgt 600

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cctggtggca gcgagggtgg gcggcggcgg agggagctgg accccatgga cgtccgcggc 720

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cagagtgcca ccgacgtggc cgcattcctg ggagcgctcg cctcgctggg cagcctcaac 840

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<212> PRT
<213> Artificial Sequence

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<223> Synthetic peptide sequence

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Gly Gly Ala Gly Arg Asp Ile Pro Pro Pro Gln Ile Glu Glu Ala Cys
20 25 30

Glu Leu Pro Glu Cys Gln Val Asp Ala Gly Asn Lys Val Cys Asn Leu
35 40 45

Gln Cys Asn Asn His Ala Cys Gly Trp Asp Gly Gly Asp Cys Ser Leu
50 55 60

Asn Phe Asn Asp Pro Trp Lys Asn Cys Thr Gln Ser Leu Gln Cys Trp
65 70 75 80

Lys Tyr Phe Ser Asp Gly His Cys Asp Ser Gln Cys Asn Ser Ala Gly
85 90 95

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

Pro Leu Tyr Asp Gln Tyr Cys Lys Asp His Phe Ser Asp Gly His Cys
        115                 120                 125

Asp Gln Gly Cys Asn Ser Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys
    130                 135                 140

Ala Glu His Val Pro Glu Arg Leu Ala Ala Gly Thr Leu Val Leu Val
145                 150                 155                 160

Val Leu Leu Pro Pro Asp Gln Leu Arg Asn Asn Ser Phe His Phe Leu
                165                 170                 175

Arg Glu Leu Ser His Val Leu His Thr Asn Val Val Phe Lys Arg Asp
            180                 185                 190

Ala Gln Gly Gln Gln Met Ile Phe Pro Tyr Tyr Gly His Glu Glu Glu
        195                 200                 205

Leu Arg Lys His Pro Ile Lys Arg Ser Thr Val Gly Trp Ala Thr Ser
    210                 215                 220

Ser Leu Leu Pro Gly Thr Ser Gly Gly Arg Gln Arg Arg Glu Leu Asp
225                 230                 235                 240

Pro Met Asp Ile Arg Gly Ser Ile Val Tyr Leu Glu Ile Asp Asn Arg
                245                 250                 255

Gln Cys Val Gln Ser Ser Ser Gln Cys Phe Gln Ser Ala Thr Asp Val
            260                 265                 270

Ala Ala Phe Leu Gly Ala Leu Ala Ser Leu Gly Ser Leu Asn Ile Pro
        275                 280                 285

Tyr Lys Ile Glu Ala Val Lys Ser Glu Pro Val Glu Pro Pro Leu Pro
    290                 295                 300

Ser Gln Leu His Leu Met Gly Gly Gly Ser Gly Gly Gly Leu Asn Asp
305                 310                 315                 320

Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Pro Pro His
                325                 330                 335

His His His His His
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<212> PRT
<213> Mus musculus

<400> 6

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Gln Cys Asn Asn His Ala Cys Gly Trp Asp Gly Gly Asp Cys Ser Leu
35 40 45

Asn Phe Asn Asp Pro Trp Lys Asn Cys Thr Gln Ser Leu Gln Cys Trp
50 55 60

Lys Tyr Phe Ser Asp Gly His Cys Asp Ser Gln Cys Asn Ser Ala Gly
65 70 75 80

Cys Leu Phe Asp Gly Phe Asp Cys Gln Leu Thr Glu Gly Gln Cys Asn
85 90 95

Pro Leu Tyr Asp Gln Tyr Cys Lys Asp His Phe Ser Asp Gly His Cys
100 105 110

Asp Gln Gly Cys Asn Ser Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys
115 120 125

Ala Glu His Val Pro Glu Arg Leu Ala Ala Gly Thr Leu Val Leu Val
130 135 140

Val Leu Leu Pro Pro Asp Gln Leu Arg Asn Asn Ser Phe His Phe Leu
145 150 155 160

Arg Glu Leu Ser His Val Leu His Thr Asn Val Val Phe Lys Arg Asp
165 170 175

Ala Gln Gly Gln Gln Met Ile Phe Pro Tyr Tyr Gly His Glu Glu Glu
180 185 190

Leu Arg Lys His Pro Ile Lys Arg Ser Thr Val Gly Trp Ala Thr Ser
195 200 205

Ser Leu Leu Pro Gly Thr Ser Gly Gly Arg Gln Arg Arg Glu Leu Asp

210 215 220

Pro Met Asp Ile Arg Gly Ser Ile Val Tyr Leu Glu Ile Asp Asn Arg
225 230 235 240

Gln Cys Val Gln Ser Ser Ser Gln Cys Phe Gln Ser Ala Thr Asp Val
245 250 255

Ala Ala Phe Leu Gly Ala Leu Ala Ser Leu Gly Ser Leu Asn Ile Pro
260 265 270

Tyr Lys Ile Glu Ala Val Lys Ser Glu Pro Val Glu Pro Pro Leu Pro
275 280 285

Ser Gln Leu His Leu Met
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<210> 7
<211> 1023
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

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gcaggcaata aggtctgcaa cctgcagtgt aataatcacg catgtggctg ggatggtggc 180

gactgctccc tcaacttcaa tgacccctgg aagaactgca cgcagtctct acagtgctgg 240

aagtatttta gcgacggcca ctgtgacagc cagtgcaact cggccggctg cctctttgat 300

ggcttcgact gccagctcac cgagggacag tgcaaccccc tgtatgacca gtactgcaag 360

gaccacttca gtgatggcca ctgcgaccag ggctgtaaca gtgccgaatg tgagtgggat 420

ggcctagact gtgctgagca tgtacccgag cggctggcag ccggcaccct ggtgctggtg 480

gtgctgcttc cacccgacca gctacggaac aactccttcc actttctgcg ggagctcagc 540

cacgtgctgc acaccaacgt ggtcttcaag cgtgatgcgc aaggccagca gatgatcttc 600

ccgtactatg gccacgagga agagctgcgc aagcacccaa tcaagcgctc tacagtgggt 660

tgggccacct cttcactgct tcctggtacc agtggtgggc gccagcgcag ggagctggac 720

cccatggaca tccgtggctc cattgtctac ctggagatcg acaaccggca atgtgtgcag 780

tcatcctcgc agtgcttcca gagtgccacc gatgtggctg ccttcctagg tgctcttgcg 840

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cctccgctgc cctcgcagct gcacctcatg ggagggggaa gcggaggcgg actgaacgac 960

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cac 1023

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<211> 882
<212> DNA
<213> Mus musculus

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tgggatggtg gcgactgctc cctcaacttc aatgacccct ggaagaactg cacgcagtct 180

ctacagtgct ggaagtattt tagcgacggc cactgtgaca gccagtgcaa ctcggccggc 240

tgcctctttg atggcttcga ctgccagctc accgagggac agtgcaaccc cctgtatgac 300

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cgggagctca gccacgtgct gcacaccaac gtggtcttca agcgtgatgc gcaaggccag 540

cagatgatct tcccgtacta tggccacgag gaagagctgc gcaagcaccc aatcaagcgc 600

tctacagtgg gttgggccac ctcttcactg cttcctggta ccagtggtgg gcgccagcgc 660

agggagctgg accccatgga catccgtggc tccattgtct acctggagat cgacaaccgg 720

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ggtgctcttg cgtcacttgg cagcctcaat attccttaca agattgaggc cgtgaagagt 840

gagccggtgg agcctccgct gccctcgcag ctgcacctca tg 882

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<211> 564
<212> PRT
<213> Artificial Sequence

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<223> Synthetic peptide sequence

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Ala His Ser Gly Gly Ala Gly Arg Asp Ile Pro Pro Pro Leu Ile Glu
20 25 30

Glu Ala Cys Glu Leu Pro Glu Cys Gln Glu Asp Ala Gly Asn Lys Val
35 40 45

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Cys Ser Leu Gln Cys Asn Asn His Ala Cys Gly Trp Asp Gly Gly Asp
    50                  55                  60

Cys Ser Leu Asn Phe Asn Asp Pro Trp Lys Asn Cys Thr Gln Ser Leu
65                  70                  75                  80

Gln Cys Trp Lys Tyr Phe Ser Asp Gly His Cys Asp Ser Gln Cys Asn
                85                  90                  95

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

Gln Cys Asn Pro Leu Tyr Asp Gln Tyr Cys Lys Asp His Phe Ser Asp
        115                 120                 125

Gly His Cys Asp Gln Gly Cys Asn Ser Ala Glu Cys Glu Trp Asp Gly
    130                 135                 140

Leu Asp Cys Ala Glu His Val Pro Glu Arg Leu Ala Ala Gly Thr Leu
145                 150                 155                 160

Val Val Val Val Leu Met Pro Pro Glu Gln Leu Arg Asn Ser Ser Phe
                165                 170                 175

His Phe Leu Arg Glu Leu Ser Arg Val Leu His Thr Asn Val Val Phe
            180                 185                 190

Lys Arg Asp Ala His Gly Gln Gln Met Ile Phe Pro Tyr Tyr Gly Arg
        195                 200                 205

Glu Glu Glu Leu Arg Lys His Pro Ile Lys Arg Ala Ala Glu Gly Trp
    210                 215                 220

Ala Ala Pro Glu Ala Leu Leu Gly Gln Val Lys Ala Ser Leu Leu Pro
225                 230                 235                 240

Gly Gly Gly Gly Gly Gly Arg Arg Arg Arg Glu Leu Asp Pro Met Asp
                245                 250                 255

Val Arg Gly Ser Ile Val Tyr Leu Glu Ile Asp Asn Arg Gln Cys Val
            260                 265                 270

Gln Ala Ser Ser Gln Cys Phe Gln Ser Ala Thr Asp Val Ala Ala Phe
        275                 280                 285

Leu Gly Ala Leu Ala Ser Leu Gly Ser Leu Asn Ile Pro Tyr Lys Ile
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290 295 300

Glu Ala Val Gln Ser Glu Thr Val Glu Pro Pro Pro Pro Ala Gln Leu
305 310 315 320

His Phe Met Gly Gly Gly Gly Ser Gly Gly Gly Gly Glu Pro Lys Ser
325 330 335

Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu
340 345 350

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
355 360 365

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
370 375 380

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
385 390 395 400

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr
405 410 415

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
420 425 430

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro
435 440 445

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
450 455 460

Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
465 470 475 480

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
485 490 495

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
500 505 510

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
515 520 525

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
530 535 540

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Ser Pro Gly Lys
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<210> 10
<211> 304
<212> PRT
<213> Macaca fascicularis

<400> 10

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Glu Leu Pro Glu Cys Gln Glu Asp Ala Gly Asn Lys Val Cys Ser Leu
            20                  25                  30


Gln Cys Asn Asn His Ala Cys Gly Trp Asp Gly Gly Asp Cys Ser Leu
        35                  40                  45


Asn Phe Asn Asp Pro Trp Lys Asn Cys Thr Gln Ser Leu Gln Cys Trp
    50                  55                  60


Lys Tyr Phe Ser Asp Gly His Cys Asp Ser Gln Cys Asn Ser Ala Gly
65                  70                  75                  80


Cys Leu Phe Asp Gly Phe Asp Cys Gln Arg Ala Glu Gly Gln Cys Asn
                85                  90                  95


Pro Leu Tyr Asp Gln Tyr Cys Lys Asp His Phe Ser Asp Gly His Cys
            100                 105                 110


Asp Gln Gly Cys Asn Ser Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys
        115                 120                 125


Ala Glu His Val Pro Glu Arg Leu Ala Ala Gly Thr Leu Val Val Val
    130                 135                 140


Val Leu Met Pro Pro Glu Gln Leu Arg Asn Ser Ser Phe His Phe Leu
145                 150                 155                 160


Arg Glu Leu Ser Arg Val Leu His Thr Asn Val Val Phe Lys Arg Asp
                165                 170                 175


Ala His Gly Gln Gln Met Ile Phe Pro Tyr Tyr Gly Arg Glu Glu Glu
            180                 185                 190
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Leu Arg Lys His Pro Ile Lys Arg Ala Ala Glu Gly Trp Ala Ala Pro
195 200 205

Glu Ala Leu Leu Gly Gln Val Lys Ala Ser Leu Leu Pro Gly Gly Gly
210 215 220

Gly Gly Gly Arg Arg Arg Arg Glu Leu Asp Pro Met Asp Val Arg Gly
225 230 235 240

Ser Ile Val Tyr Leu Glu Ile Asp Asn Arg Gln Cys Val Gln Ala Ser
245 250 255

Ser Gln Cys Phe Gln Ser Ala Thr Asp Val Ala Ala Phe Leu Gly Ala
260 265 270

Leu Ala Ser Leu Gly Ser Leu Asn Ile Pro Tyr Lys Ile Glu Ala Val
275 280 285

Gln Ser Glu Thr Val Glu Pro Pro Pro Pro Ala Gln Leu His Phe Met
290 295 300

<210> 11
<211> 1692
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

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ttcttcctct atagcaagct caccgtggac aagagcaggt ggcagcaggg gaacgtcttc 1620

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tccccgggta aa 1692

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<212> DNA
<213> Macaca fascicularis

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tgggacggcg gtgactgctc cctcaacttc aatgacccct ggaagaactg cacgcagtct 180

ctgcagtgct ggaagtactt cagtgacggc cactgtgaca gccagtgcaa ctcagccggc 240

tgcctcttcg acggctttga ctgccagcgt gcggaaggcc agtgcaaccc cctgtacgac 300

cagtactgca aggaccactt cagcgacggg cactgcgacc agggctgcaa cagcgcggag 360

tgcgagtggg acgggctgga ctgtgcggag catgtacccg agaggctggc ggccggcacg 420

ctggtggtgg tggtgctgat gccgccggag cagctgcgca acagctcctt ccacttcctg 480

cgggagctca gccgcgtgct gcacaccaac gtggtcttca agcgtgacgc acacggccag 540

cagatgatct tcccctacta cggccgcgag gaggagctgc gcaagcaccc catcaagcgt 600

gccgccgagg gctgggccgc acctgaagcc ctgctgggcc aggtgaaggc ctcgctgctc 660

cctggtggcg gtggaggtgg gcggcggcgg agggagctgg accccatgga cgtccgcggc 720

tccatcgtct acctggagat tgacaaccgg cagtgtgtgc aggcctcctc gcagtgcttc 780

cagagtgcca ccgacgtggc cgcattcctg ggagcgctcg cctcgctggg cagcctcaac 840

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ctgcacttca tg 912

<210> 13
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 13

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

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

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

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

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

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

Ala Lys Asp Leu Pro Tyr Tyr Gly Tyr Thr Pro Phe Val Met Asp Ala
100 105 110

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

<210> 14
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 14
gcggtacagt tggtggagtc tgggggaggc ttagtgcagc ctggaaggtc cttgaaactc 60

tcctgtacag cctctggatt cactttcagt agctttgcaa tggcctgggt ccgccaggct 120

ccaacgaagg ggctggagtg ggtcgcatcc attagttatg gtggtgctga cacttactat 180

cgagactccg tgaagggccg attcactatc tccagagata atgcaaaaag cagcctatat 240

ttgcaaatgg acagtctgag gtctgaggac acgtccactt attactgtgc aaaagacctt 300

ccatactacg gatatacccc ctttgttatg gatgcctggg gtcagggaac ttcagtcact 360

gtctcctca 369

<210> 15
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 15

Ser Phe Ala Met Ala
1 5

<210> 16
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 16

Gly Phe Thr Phe Ser Ser Phe Ala Met Ala
1 5 10

<210> 17
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 17
tccttcgcca tggcc 15

<210> 18
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 18
ggattcacct ttagttcctt cgccatggcc 30

<210> 19
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 19

Ser Ile Ser Tyr Gly Gly Ala Asp Thr Tyr Tyr Arg Asp Ser Val Lys
1 5 10 15

Gly

<210> 20
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 20

Ser Tyr Gly Gly Ala Asp
1 5

<210> 21
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 21
tccatctcct atggaggcgc tgacacctac taccgggact ccgtgaaggg c 51

<210> 22
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 22
cctatggagg cgctgac 17

<210> 23
<211> 14
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic peptide sequence

<400> 23

Asp Leu Pro Tyr Tyr Gly Tyr Thr Pro Phe Val Met Asp Ala
1 5 10

<210> 24
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 24
gatctgccct actacggcta cacccccttc gtgatggacg cc 42

<210> 25
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 25

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

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

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

Lys Phe Ala Ser Gln Thr Ile Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

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

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
100 105

<210> 26
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 26
gacatcatgc tgactcagtc tccacctacc ctgtctgtaa ctccaggaga gaccatcagt 60

ctctcctgca gggccagtca gagaattaac actgacttac attggtatca gcaaaaacca 120

aatgagtctc caagggttct catcaaattt gcttcccaga ccatctctgg agtcccctcc 180

aggttcagtg gcagtggatc agggacagat ttcactctca atattaacag agtagagcct 240

gaagattttt cagtttatta ctgtcaacag agtaatagct ggccatacac gtttggcgct 300

gggaccaagc tggaactgaa a 321

<210> 27
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 27

Arg Ala Ser Gln Arg Ile Asn Thr Asp Leu His
1 5 10

<210> 28
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 28
cgggcctccc agcggatcaa caccgacctg cac 33

<210> 29
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 29

Phe Ala Ser Gln Thr Ile Ser
1 5

<210> 30
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic nucleotide sequence

<400> 30
ttcgccagcc agaccatctc c 21

<210> 31
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 31

Gln Gln Ser Asn Ser Trp Pro Tyr Thr
1 5

<210> 32
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 32
cagcagtcca actcctggcc ctacacc 27

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

<220>
<223> Synthetic peptide sequence

<400> 33

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

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

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

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

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

Leu Gln Met Thr Ser Leu Arg Ser Glu Asp Thr Ala Leu Tyr Tyr Cys

85 90 95

Ala Arg Glu Gly Gln Phe Gly Asp Tyr Phe Glu Tyr Trp Gly Gln Gly
100 105 110

Val Met Val Thr Val Ser Ser
115

<210> 34
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 34
gaggtgcagc tggtggagtc tggaggaggc ttagtgcagc ctggaaggtc cctgaaagtc 60

tcctgtttag cctctggatt cactttcagt cactatggaa tgaactggat tcgccaggct 120

ccagggaagg ggctggactg ggttgcatct attagtagga gtggcagtta catccgctat 180

gtagacacag tgaagggccg attcaccgtc tccagagaca ttgccaagaa caccctgtac 240

ctgcaaatga ccagtctgag gtctgaagac actgccttgt attactgtgc aagagaggga 300

caattcgggg actactttga gtactggggc caaggagtca tggtcacagt ctcctca 357

<210> 35
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 35

His Tyr Gly Met Asn
1 5

<210> 36
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 36

Gly Phe Thr Phe Ser His Tyr Gly Met Asn
1 5 10

<210> 37
<211> 15

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 37
cactatggaa tgaac 15

<210> 38
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 38
ggattcactt tcagtcacta tggaatgaac 30

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

<220>
<223> Synthetic peptide sequence

<400> 39

Ser Ile Ser Arg Ser Gly Ser Tyr Ile Arg Tyr Val Asp Thr Val Lys
1 5 10 15

Gly

<210> 40
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 40

Ser Arg Ser Gly Ser Tyr
1 5

<210> 41
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 41

tctattagta ggagtggcag ttacatccgc tatgtagaca cagtgaaggg c 51

<210> 42
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 42
agtaggagtg gcagttac 18

<210> 43
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 43

Glu Gly Gln Phe Gly Asp Tyr Phe Glu Tyr
1 5 10

<210> 44
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 44
gagggacaat tcggggacta ctttgagtac 30

<210> 45
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 45

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

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

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

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

Ser Gly Ser Gly Thr Asp Phe Thr Leu His Ile Asn Thr Val Glu Pro
65 70 75 80

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

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

<210> 46
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 46
gacatcatgc tgactcagtc tccagctacc ctgtctgtaa ctccaggaga gagaatcagt 60

ctctcctgca gggccagtca gaaaattagc actaacttac attggtatca gcaaaagcca 120

aatgagtctc caaggattct catcaaatat gcttcccaga ccatctctgg aatcccctcc 180

aggttcagtg gcagtggatc agggacagat ttcactctcc atattaacac agtagagcct 240

gaagattttt cagtttatta ctgtcaacag actaatagtt ggccgctcac gttcggttct 300

gggaccaagc tggagatcaa g 321

<210> 47
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 47

Arg Ala Ser Gln Lys Ile Ser Thr Asn Leu His
1 5 10

<210> 48
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 48
agggccagtc agaaaattag cactaactta cat 33

<210> 49
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 49

Tyr Ala Ser Gln Thr Ile Ser
1 5

<210> 50
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 50
tatgcttccc agaccatctc t 21

<210> 51
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 51

Gln Gln Thr Asn Ser Trp Pro Leu Thr
1 5

<210> 52
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 52
caacagacta atagttggcc gctcacg 27

<210> 53
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 53

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

Ser Leu Lys Leu Ser Cys Leu Ala Ser Gly Phe Thr Phe Ser His Tyr
20 25 30

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

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

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

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

Ala Arg Glu Gly Gln Phe Gly Asp Tyr Phe Glu Tyr Trp Gly Arg Gly
100 105 110

Val Met Val Thr Val Ser Ser
115

<210> 54
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 54
gaggtgcagc tagtggagtc tggaggaggc ttagtgcagc ctggaaggtc cctgaaactc 60

tcctgtttag cctctggatt cactttcagt cactatggag tgaactggat tcgccaggct 120

ccagggaagg ggctggaatg gattgcatct attagtagaa gtagcagtta catctactat 180

gcagacacag tgaagggccg attcaccatc tccagagaca atgccaagaa caccctgttc 240

ctgcaattga ccagtctgag gtctgaagac actgccttgt attactgtgc aagagagggg 300

caattcgggg actactttga tactggggc cgaggagtca tggtcacagt ctcctca 357

<210> 55
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 55

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

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

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

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

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

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

Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
            100                 105
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<210> 56
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 56
gacatcatac tgactcagtc tccagctgcc ctgtctgtaa ctccaggaga gagcatcagt 60

ctctcctgca gggccagtca gagtattaac actaacttgc attggtatca gcaaaaacca 120

aatgagtctc caagggttct catcaaatat gcttcccaga ccatctctgg aatcccctcc 180

aggttcagtg gcagtggatc agggacagat ttcactctca atattaacag agtagagcct 240

gaagattttt cagtttatta ctgtcaacag agtaatagct ggccgctcac gttcggttct 300

gggaccaagc tggagatcaa a 321

<210> 57
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 57

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

Ser Leu Lys Leu Ser Cys Leu Ala Ser Gly Phe Thr Phe Ser His Tyr
20 25 30

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

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

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

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

Ala Arg Glu Gly Gln Phe Gly Asp Tyr Phe Asp Tyr Trp Gly Gln Gly
100 105 110

Val Met Val Thr Val Ser Ser
115

<210> 58
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 58
gaggtgcagc tggtggagtc tggaggaggc ttagtgcagc ctggaaggtc cctgaaactc 60

tcctgtttag cctctggatt cactttcagt cactatggaa tgaactggat tcgccaggct 120

ccagggaagg ggctggagtg gattacatct attactagta gtagcagtta catctactat 180

gcagacacag tgaagggccg attcaccatc tccagagaca atgccaagaa caccctgtac 240

ctgcaaatga ccagtctgag gtctgaagac actgccttgt attactgtgc aagagagggg 300

caattcgggg actactttga ttactggggc caaggagtca tggtcacagt ctcctca 357

<210> 59
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 59

Asp Ile Met Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Thr Pro Gly

1 5 10 15

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

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

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

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

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

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

<210> 60
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 60
gacatcatgc tgactcagtc tccagctacc ctgtctgtaa ctccaggaga gagcatcagt 60

ctctcctgca gggccagtca gagtattaac actaacttac attggtatca gcaaaaacca 120

aatgagtctc caagggttct catcaaatat gcttcccaga ccatctctgg aatcccctcc 180

aggttcagtg gcagtggatc agggacagat ttcactctca atattaacag agtagagcct 240

gaagattttt cagtttatta ctgtcaacag agtaatagct ggccgctcac gttcggttct 300

gggaccaagc tggagatcaa a 321

<210> 61
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 61

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

Ser Leu Lys Leu Ser Cys Leu Ala Ser Gly Phe Thr Phe Ser His Tyr
20 25 30

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

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

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

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

Ala Arg Glu Gly Gln Phe Gly Asp Tyr Phe Asp Tyr Trp Gly Gln Gly
100 105 110

Val Met Val Thr Val Ser Ser
115

<210> 62
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 62
gaggtgcagc tggtggagtc tggaggaggc ttagtgcagc ctggaaggtc cctgaaactc 60

tcctgtttag cctctggatt cactttcagt cactatggaa tgaactggat tcgccaggct 120

ccagggaagg ggctggagtg gattacatct attactagta gtagcagtta catctactat 180

gcagacacag tgaagggccg attcaccatc tccagagaca atgccaagaa caccctgtac 240

ctgcaaatga ccagtctgag gtctgaagac actgccttgt attactgtgc aagagagggg 300

caattcgggg actactttga ttactggggc caaggagtca tggtcacagt ctcctca 357

<210> 63
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 63

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

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

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

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

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

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

Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
            100                 105
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<210> 64
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 64

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gacatcatgc tgactcagtc tccagctacc ctgtctgtaa ctccaggaga gagcatcagt       60

ctctcctgca gggccagtca gagtattaac actaacttac attggtatca gcaaaaacca      120

aatgagtctc caagggttct catcaaatat gcttcccaga ccatctctgg aatcccctcc      180

aggttcagtg gcagtggatc agggacagat ttcactctca atattaacag agtagagcct      240

gaagattttt cagtttatta ctgtcaacag agtaatagct ggccgctcac gttcggttct      300

gggaccaagc tggagatcaa a                                                321
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<210> 65
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 65

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

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

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

Gly Ala Ile Trp Thr Gly Gly Ser Thr Ala Tyr Asn Ser Leu Leu Lys
50 55 60

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

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

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

Thr Val Ser Ser
115

<210> 66
<211> 348
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 66
caggtgcagg tgaaggagtc aggacctggt ctggtgcagc cctcacagac tttgtctctc 60

acctgcactg tctctgggtt ctcactaacc agctatcatg taagctgggt tcgccagcct 120

ccaggaaaag gtctggagtg gatgggagca atatggactg gtggaagcac agcatataat 180

tcacttctca aatcccgact gagcatcagc agggacatct ccaagagcca agttttctta 240

aaaatgaaca gtctgcaaac tgaagacaca gccacttact actgtgccag agccgatttc 300

tatgttatgg atgcctgggg tcaaggagct tcagtcactg tctcctca 348

<210> 67
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 67

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

Glu Ser Ile Ser Leu Ser Cys Arg Ala Ser Gln Ser Ile Ser Thr Asp

20 25 30

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

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

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

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

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

<210> 68
<211> 320
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 68
acatcatgct gactcagtct ccagttaccc tgtctgtgtc tccaggagag agcatcagtc 60

tctcctgcag ggccagtcag agtattagca ctgacttgca ttggtatcag caaaaaccaa 120

atgagtctcc aagggttctc atcaaatatg gttcccagac catctctgga atcccctcca 180

ggttcagtgg cagtggatca gggacagatt tcactctcaa tattaacaga gtagagcctg 240

aagatttttc agtttattac tgtcagcaga gtaatagctg gccatggaca ttcggtggag 300

gcaccaagct ggaattgaaa 320

<210> 69
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 69

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 Phe
20 25 30

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

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

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

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

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

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

<210> 70
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 70

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gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc       60

tcctgtgcag cctctggatt cacctttagt tccttcgcca tggcctgggt ccgccaggct      120

ccagggaagg ggctggagtg ggtggcctcc atctcctatg gaggcgctga cacctactac      180

cgggactccg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat      240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagatctg      300

ccctactacg gctacacccc cttcgtgatg gacgcctggg gccagggaac cctggtcacc      360

gtctcctca                                                              369
```

<210> 71
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 71

```
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 Phe
```

20 25 30

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

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

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

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

Ala Lys Asp Leu Pro Tyr Tyr Gly Tyr Thr Pro Phe Val Met Asp Ala
100 105 110

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

<210> 72
<211> 369
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 72
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60

tcctgtgcag cctctggatt cacctttagt tccttcgcca tggcctgggt ccgccaggct 120

ccagggaagg ggctggagtg ggtggcctcc atctcctatg gaggcgctga cacctactac 180

cgggactccg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gaaggatctg 300

ccctactacg gctacacccc cttcgtgatg gacgcctggg gccagggaac cctggtcacc 360

gtctcctca 369

<210> 73
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 73

Ser Phe Ala Met Ala
1 5

<210> 74
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 74

Gly Phe Thr Phe Ser Ser Phe Ala Met Ala
1 5 10

<210> 75
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 75
tccttcgcca tggcc 15

<210> 76
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 76
ggattcacct ttagttcctt cgccatggcc 30

<210> 77
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 77

Ser Ile Ser Tyr Gly Gly Ala Asp Thr Tyr Tyr Arg Asp Ser Val Lys
1 5 10 15

Gly

<210> 78
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 78

Ser Tyr Gly Gly Ala Asp
1 5

<210> 79
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 79
tccatctcct atggaggcgc tgacacctac taccgggact ccgtgaaggg c 51

<210> 80
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 80
cctatggagg cgctgac 17

<210> 81
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 81

Asp Leu Pro Tyr Tyr Gly Tyr Thr Pro Phe Val Met Asp Ala
1 5 10

<210> 82
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 82
gatctgccct actacggcta cacccccttc gtgatggacg cc 42

<210> 83
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 83

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 Arg Ile Asn Thr Asp
20 25 30

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

Tyr Phe Ala Ser Gln Thr Ile 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 Trp Pro Tyr
85 90 95

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

<210> 84
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 84
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatctatttc gccagccaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag 300

gggaccaagc tggagatcaa a 321

<210> 85
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 85

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

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

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

Lys Phe Ala Ser Gln Thr Ile 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 Trp Pro Tyr
85 90 95

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

<210> 86
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 86
gacatccagc tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca 120

gggaaagccc ctaaggtgct gatcaagttc gccagccaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag 300

gggaccaagc tggagatcaa a 321

<210> 87
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 87

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

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

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

Tyr Phe Ala Ser Gln Thr Ile 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 Trp Pro Tyr
                85                  90                  95

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

<210> 88
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 88

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gacatccagc tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc       60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca      120

gggaaagccc ctaagctcct gatctatttc gccagccaga ccatctccgg ggtcccatca      180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct      240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag      300

gggaccaagc tggagatcaa a                                                321
```

<210> 89
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 89

```
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 Arg Ile Asn Thr Asp
            20                  25                  30

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

Tyr Phe Ala Ser Gln Thr Ile 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 Trp Pro Tyr
                85                  90                  95

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

<210> 90
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 90

```
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc       60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca      120

gggaaagccc ctaaggtgct gatctatttc gccagccaga ccatctccgg ggtcccatca      180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct      240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag      300

gggaccaagc tggagatcaa a                                                321
```

<210> 91
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 91

```
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 Arg Ile Asn Thr Asp
            20                  25                  30
```

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

Lys Phe Ala Ser Gln Thr Ile 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 Trp Pro Tyr
                85                  90                  95

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

<210> 92
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 92

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gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc       60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca      120

gggaaagccc ctaagctcct gatcaagttc gccagccaga ccatctccgg ggtcccatca      180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct      240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag      300

gggaccaagc tggagatcaa a                                                321
```

<210> 93
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 93

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

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

Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Val Leu Ile
```

35 40 45

Tyr Phe Ala Ser Gln Thr Ile 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 Trp Pro Tyr
85 90 95

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

<210> 94
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 94
gacatccagc tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca 120

gggaaagccc ctaaggtgct gatctatttc gccagccaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag 300

gggaccaagc tggagatcaa a 321

<210> 95
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 95

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

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

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

Lys Phe Ala Ser Gln Thr Ile 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 Trp Pro Tyr
85 90 95

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

<210> 96
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 96
gacatccagc tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatcaagttc gccagccaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag 300

gggaccaagc tggagatcaa a 321

<210> 97
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 97

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 Arg Ile Asn Thr Asp
20 25 30

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

Lys Phe Ala Ser Gln Thr Ile 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 Trp Pro Tyr
85 90 95

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

<210> 98
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 98
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca 120

gggaaagccc ctaaggtgct gatcaagttc gccagccaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag 300

gggaccaagc tggagatcaa a 321

<210> 99
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 99

Arg Ala Ser Gln Arg Ile Asn Thr Asp Leu His
1 5 10

<210> 100
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 100
cgggcctccc agcggatcaa caccgacctg cac 33

<210> 101
<211> 7

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 101

Phe Ala Ser Gln Thr Ile Ser
1 5

<210> 102
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 102
ttcgccagcc agaccatctc c 21

<210> 103
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 103

Gln Gln Ser Asn Ser Trp Pro Tyr Thr
1 5

<210> 104
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 104
cagcagtcca actcctggcc ctacacc 27

<210> 105
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 105

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

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

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

Lys Phe Ala Ser Gln Thr Ile 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 Trp Pro Tyr
                85                  90                  95

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

<210> 106
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 106

```
gacatcatgc tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc       60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca      120

gggaaagccc ctaaggtgct gatcaagttc gccagccaga ccatctccgg ggtcccatca      180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct      240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag      300

gggaccaagc tggagatcaa a                                                321
```

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

<220>
<223> Synthetic peptide sequence

<400> 107

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

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

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

Lys Phe Ala Ser Gln Thr Ile 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 Trp Pro Tyr
                85                  90                  95

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

<210> 108
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 108

```
gacatcatgc tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc       60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca      120

gggaaagccc ctagggtgct gatcaagttc gccagccaga ccatctccgg ggtcccatca      180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct      240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag      300

gggaccaagc tggagatcaa a                                                321
```

<210> 109
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 109

```
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 Arg Ile Asn Thr Asp
            20                  25                  30

Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Arg Val Leu Ile
```

35 40 45

Lys Phe Ala Ser Gln Thr Ile 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 Trp Pro Tyr
85 90 95

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

<210> 110
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 110
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca 120

gggaaagccc ctagggtgct gatcaagttc gccagccaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag 300

gggaccaagc tggagatcaa a 321

<210> 111
<211> 453
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 111

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 Phe
20 25 30

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

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

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

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

Ala Lys Asp Leu Pro Tyr Tyr Gly Tyr Thr Pro Phe Val Met Asp Ala
            100                 105                 110

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
        115                 120                 125

Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly
    130                 135                 140

Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val
145                 150                 155                 160

Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe
                165                 170                 175

Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val
            180                 185                 190

Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val
        195                 200                 205

Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys
    210                 215                 220

Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala
225                 230                 235                 240

Ala Gly Ala Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
                245                 250                 255

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
            260                 265                 270

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
        275                 280                 285

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
    290                 295                 300
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Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
305                 310                 315                 320

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
                325                 330                 335

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
            340                 345                 350

Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
        355                 360                 365

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
    370                 375                 380

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
385                 390                 395                 400

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
                405                 410                 415

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
            420                 425                 430

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
        435                 440                 445

Leu Ser Pro Gly Lys
    450
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<210> 112
<211> 1359
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 112

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tcctgtgcag cctctggatt cacctttagt tccttcgcca tggcctgggt ccgccaggct      120

ccagggaagg ggctggagtg ggtggcctcc atctcctatg gaggcgctga cacctactac      180

cgggactccg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat      240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gaaggatctg      300

ccctactacg gctacacccc cttcgtgatg gacgcctggg gccagggaac cctggtcacc      360

gtctcctcag cgtcgaccaa gggcccatcg gtcttccccc tggcaccctc ctccaagagc      420
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acctctgggg gcacagcggc cctgggctgc ctggtcaagg actacttccc cgaaccggtg 480

acggtgtcgt ggaactcagg cgccctgacc agcggcgtgc acaccttccc ggctgtccta 540

cagtcctcag gactctactc cctcagcagc gtggtgaccg tgccctccag cagcttgggc 600

acccagacct acatctgcaa cgtgaatcac aagcccagca acaccaaggt ggacaagaaa 660

gttgagccca aatcttgtga caaaactcac acatgcccac cgtgcccagc acctgaagcc 720

gctggggcac cgtcagtctt cctcttcccc ccaaaaccca aggacaccct catgatctcc 780

cggacccctg aggtcacatg cgtggtggtg gacgtgagcc acgaagaccc tgaggtcaag 840

ttcaactggt acgtggacgg cgtggaggtg cataatgcca agacaaagcc gcgggaggag 900

cagtacaaca gcacgtaccg tgtggtcagc gtcctcaccg tcctgcacca ggactggctg 960

aatggcaagg agtacaagtg caaggtctcc aacaaagccc tcccagcccc catcgagaaa 1020

accatctcca aagccaaagg gcagccccga gaaccacagg tgtacaccct gcccccatcc 1080

cgggaggaga tgaccaagaa ccaggtcagc ctgacctgcc tggtcaaagg cttctatccc 1140

agcgacatcg ccgtggagtg ggagagcaat gggcagccgg agaacaacta caagaccacg 1200

cctcccgtgc tggactccga cggctccttc ttcctctata gcaagctcac cgtggacaag 1260

agcaggtggc agcaggggaa cgtcttctca tgctccgtga tgcatgaggc tctgcacaac 1320

cactacacgc agaagagcct ctccctgtcc ccgggtaaa 1359

<210> 113
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 113

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 Arg Ile Asn Thr Asp
20 25 30

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

Lys Phe Ala Ser Gln Thr Ile 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

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

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

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210
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<210> 114
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 114

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gacatcatgc tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc       60

atcacttgcc gggcctccca gcggatcaac accgacctgc actggtatca gcagaaacca      120

gggaaagccc ctagggtgct gatcaagttc gccagccaga ccatctccgg ggtcccatca      180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct      240

gaagattttg caacttacta ctgtcagcag tccaactcct ggccctacac ctttggccag      300

gggaccaagc tggagatcaa acgaactgtg gctgcaccat ctgtcttcat cttcccgcca      360

tctgatgagc agttgaaatc tggaactgcc tctgttgtgt gcctgctgaa taacttctat      420

cccagagagg ccaaagtaca gtggaaggtg gataacgccc tccaatcggg taactcccag      480

gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg      540
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ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 600

ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gt 642

<210> 115
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 115

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 His Tyr
20 25 30

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

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

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

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

Ala Arg Glu Gly Gln Phe Gly Asp Tyr Phe Glu Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 116
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 116
gaggtgcagc tggtggagtc tgggggaggc ttggtccagc ctgggggtc cctgagactc 60

tcctgtgcag cctctggatt cacctttagt cactacggca tgaactgggt ccgccaggct 120

ccagggaagg ggctggagtg ggtggcctcc atctccagat ccggctccta catcagatac 180

gtggacaccg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagagggc 300

cagttcggcg actacttcga gtactggggc cagggaaccc tggtcaccgt ctcctca 357

<210> 117
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 117

His Tyr Gly Met Asn
1 5

<210> 118
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 118

Gly Phe Thr Phe Ser His Tyr Gly Met Asn
1 5 10

<210> 119
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 119
cactatggaa tgaac 15

<210> 120
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 120
ggattcactt tcagtcacta tggaatgaac 30

<210> 121
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 121

Ser Ile Ser Arg Ser Gly Ser Tyr Ile Arg Tyr Val Asp Thr Val Lys
1 5 10 15

Gly

<210> 122
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 122

Ser Arg Ser Gly Ser Tyr
1 5

<210> 123
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 123
tctattagta ggagtggcag ttacatccgc tatgtagaca cagtgaaggg c 51

<210> 124
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 124
agtaggagtg gcagttac 18

<210> 125
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 125

Glu Gly Gln Phe Gly Asp Tyr Phe Glu Tyr

1 5 10

<210> 126
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 126
gagggacaat tcggggacta ctttgagtac 30

<210> 127
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 127

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 Lys Ile Ser Thr Asn
20 25 30

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

Tyr Tyr Ala Ser Gln Thr Ile 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 Trp Pro Leu
85 90 95

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

<210> 128
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 128
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gaagatctcc accaacctgc actggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatctattac gcctctcaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag accaactcct ggcccctgac cttcggcgga 300

gggaccaagg tggagatcaa a 321

<210> 129
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 129

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 Lys Ile Ser Thr Asn
20 25 30

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

Lys Tyr Ala Ser Gln Thr Ile 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 Trp Pro Leu
85 90 95

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

<210> 130
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 130
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gaagatctcc accaacctgc actggtatca gcagaaacca 120

gggaaagccc ctaagatcct gatcaagtac gcctctcaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag accaactcct ggcccctgac cttcggcgga 300

gggaccaagg tggagatcaa a 321

<210> 131
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 131

Arg Ala Ser Gln Lys Ile Ser Thr Asn Leu His
1 5 10

<210> 132
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 132
agggccagtc agaaaattag cactaactta cat 33

<210> 133
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 133

Tyr Ala Ser Gln Thr Ile Ser
1 5

<210> 134
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 134
tatgcttccc agaccatctc t 21

<210> 135
<211> 10

<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 135

Gln Gln Thr Asn Ser Trp Pro Leu Thr Thr
1 5 10

<210> 136
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 136
caacagacta atagttggcc gctcacg 27

<210> 137
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 137

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

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

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

Tyr Tyr Ala Ser Gln Thr Ile 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 Trp Pro Leu
85 90 95

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

<210> 138

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

<220>
<223> Synthetic nucleotide sequence

<400> 138
gacatccagc tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gaagatctcc accaacctgc actggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatctattac gcctctcaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag accaactcct ggcccctgac cttcggcgga 300

gggaccaagg tggagatcaa a 321

<210> 139
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 139

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 Lys Ile Ser Thr Asn
20 25 30

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

Tyr Tyr Ala Ser Gln Thr Ile 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 Trp Pro Leu
85 90 95

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

<210> 140
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 140
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gaagatctcc accaacctgc actggtatca gcagaaacca 120

gggaaagccc ctaagatcct gatctattac gcctctcaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag accaactcct ggcccctgac cttcggcgga 300

gggaccaagg tggagatcaa a 321

<210> 141
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 141

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 Lys Ile Ser Thr Asn
20 25 30

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

Lys Tyr Ala Ser Gln Thr Ile 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 Trp Pro Leu
85 90 95

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

<210> 142
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 142
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gaagatctcc accaacctgc actggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatcaagtac gcctctcaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag accaactcct ggcccctgac cttcggcgga 300

gggaccaagg tggagatcaa a 321

<210> 143
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 143

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

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

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

Tyr Tyr Ala Ser Gln Thr Ile 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 Trp Pro Leu
85 90 95

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

<210> 144
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 144
gacatccagc tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gaagatctcc accaacctgc actggtatca gcagaaacca 120

gggaaagccc ctaagatcct gatctattac gcctctcaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag accaactcct ggcccctgac cttcggcgga 300

gggaccaagg tggagatcaa a 321

<210> 145
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 145

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

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

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

Lys Tyr Ala Ser Gln Thr Ile 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 Trp Pro Leu
85 90 95

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

<210> 146
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 146
gacatccagc tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gaagatctcc accaacctgc actggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatcaagtac gcctctcaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag accaactcct ggcccctgac cttcggcgga 300

gggaccaagg tggagatcaa a 321

<210> 147
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 147

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

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

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

Lys Tyr Ala Ser Gln Thr Ile 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 Trp Pro Leu
85 90 95

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

<210> 148
<211> 321
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic nucleotide sequence

<400> 148
gacatccagc tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60

atcacttgcc gggcctccca gaagatctcc accaacctgc actggtatca gcagaaacca 120

gggaaagccc ctaagatcct gatcaagtac gcctctcaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag accaactcct ggcccctgac cttcggcgga 300

gggaccaagg tggagatcaa a 321

<210> 149
<211> 449
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide sequence

<400> 149

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 His Tyr
20 25 30

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

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

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

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

Ala Arg Glu Gly Gln Phe Gly Asp Tyr Phe Glu Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
115 120 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
130 135 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145 150 155 160

Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu
165 170 175

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
180 185 190

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Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
    210                 215                 220

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Ala Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320

Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
                325                 330                 335

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385                 390                 395                 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                405                 410                 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
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Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
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ccagggaagg ggctggagtg ggtggcctcc atctccagat ccggctccta catcagatac 180

gtggacaccg tgaagggccg attcaccatc tccagagaca acgccaagaa ctcactgtat 240

ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagagggc 300

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

Lys Tyr Ala Ser Gln Thr Ile 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 Trp Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala

100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
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Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
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Phe Asn Arg Gly Glu Cys
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gggaaagccc ctaagatcct gatcaagtac gcctctcaga ccatctccgg ggtcccatca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240

gaagattttg caacttacta ctgtcagcag accaactcct ggcccctgac cttcggcgga 300

gggaccaagg tggagatcaa a 321